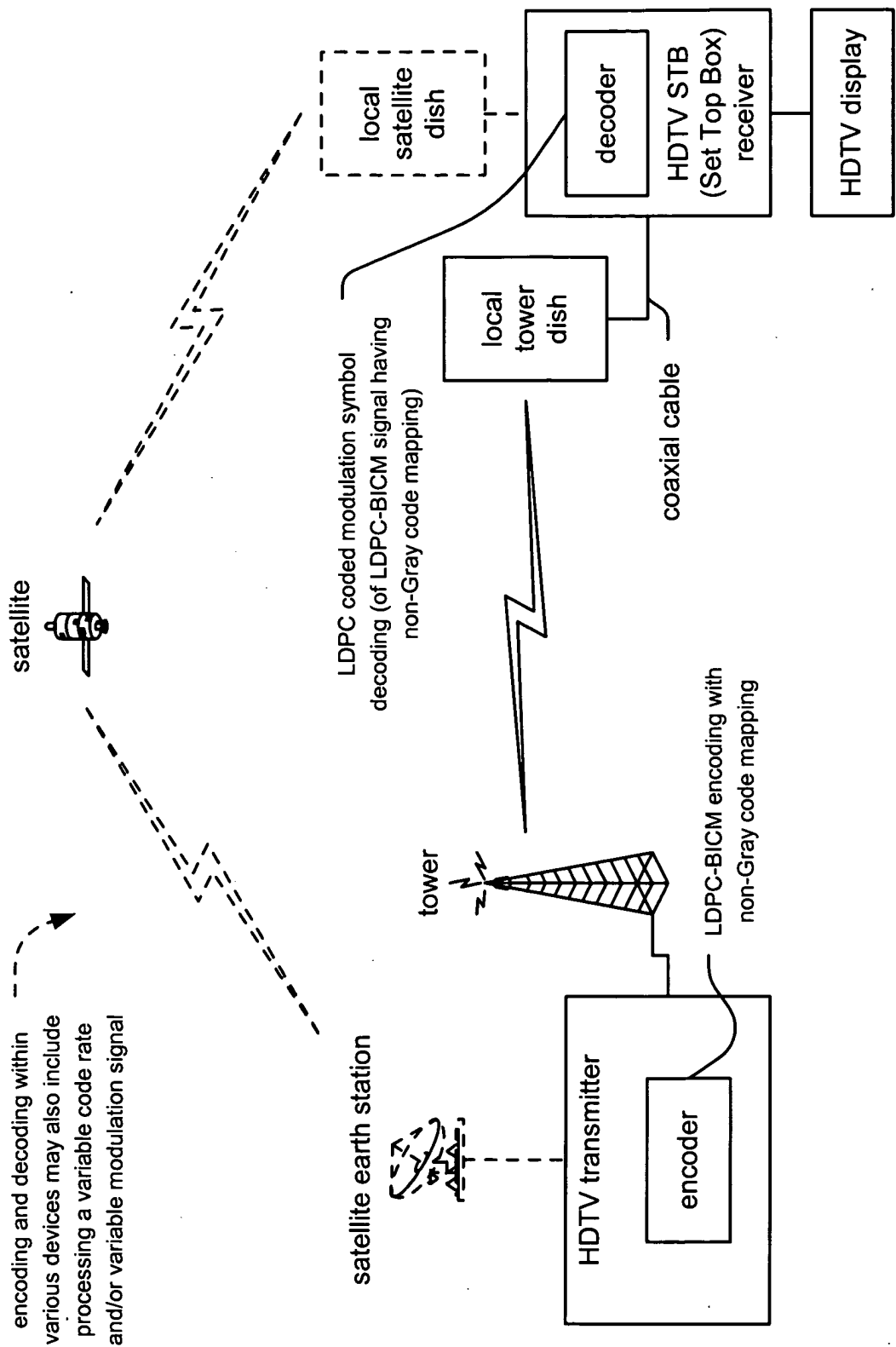


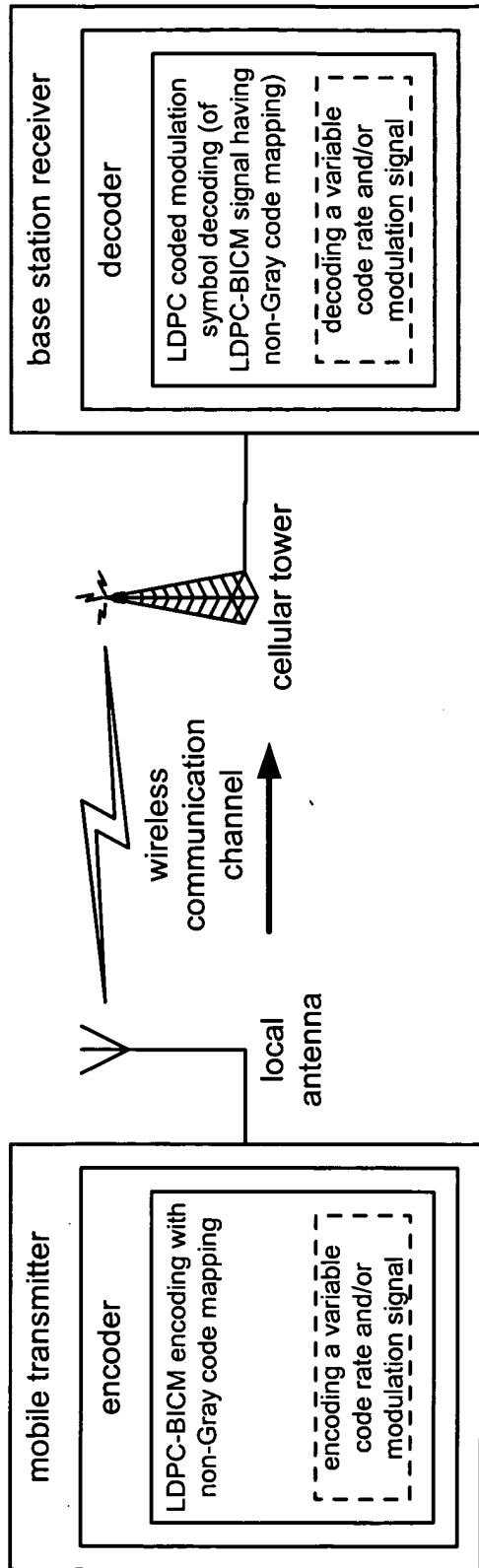
satellite communication system

Fig. 1

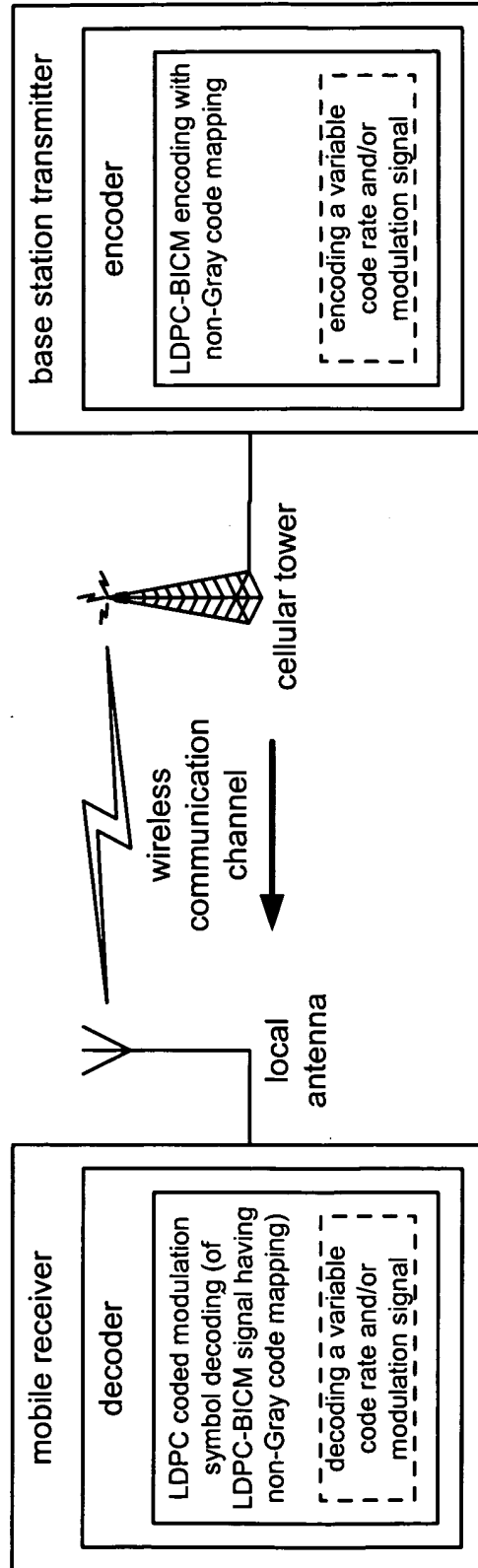


HDTV (High Definition Television) communication system

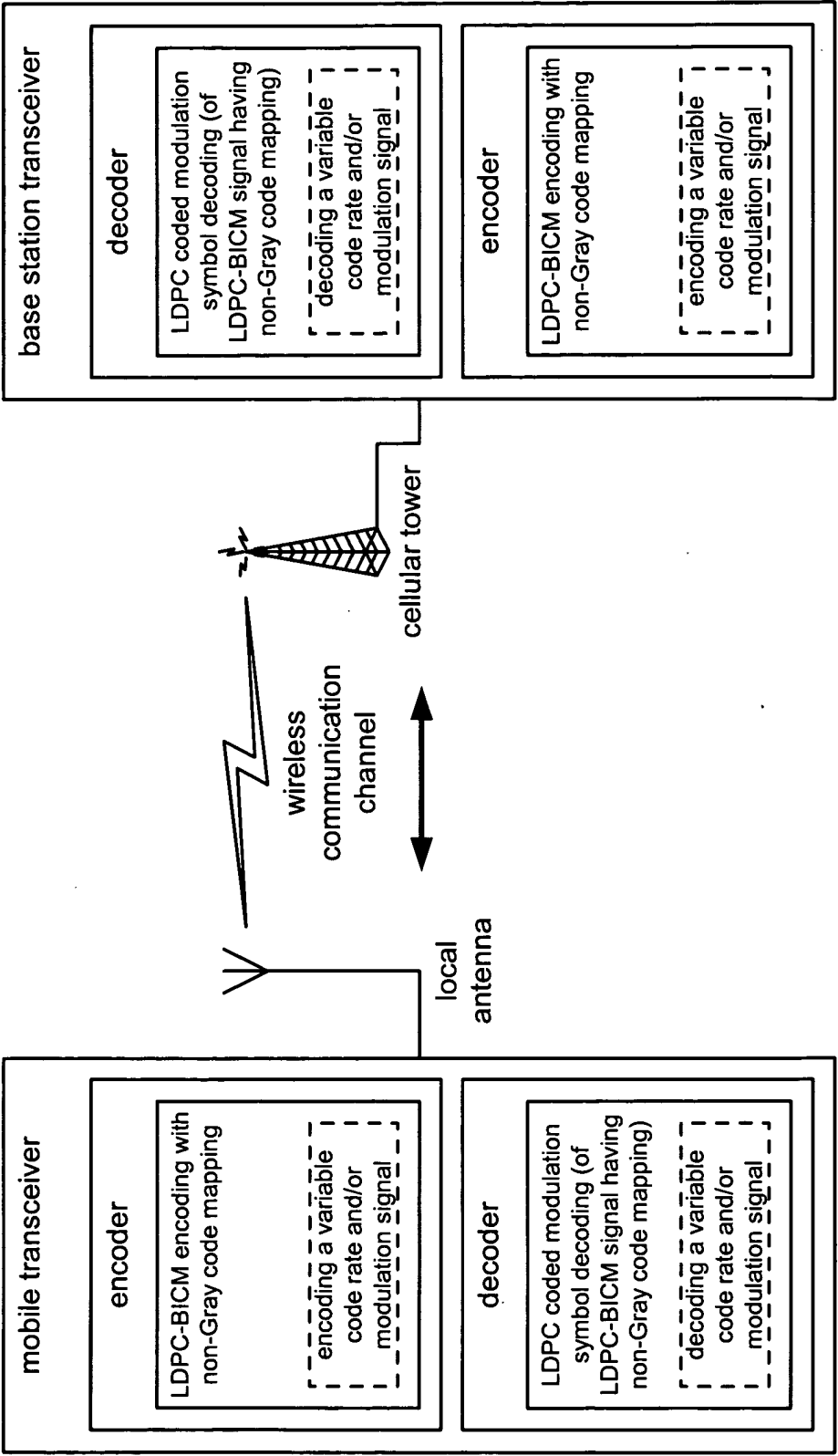
Fig. 2



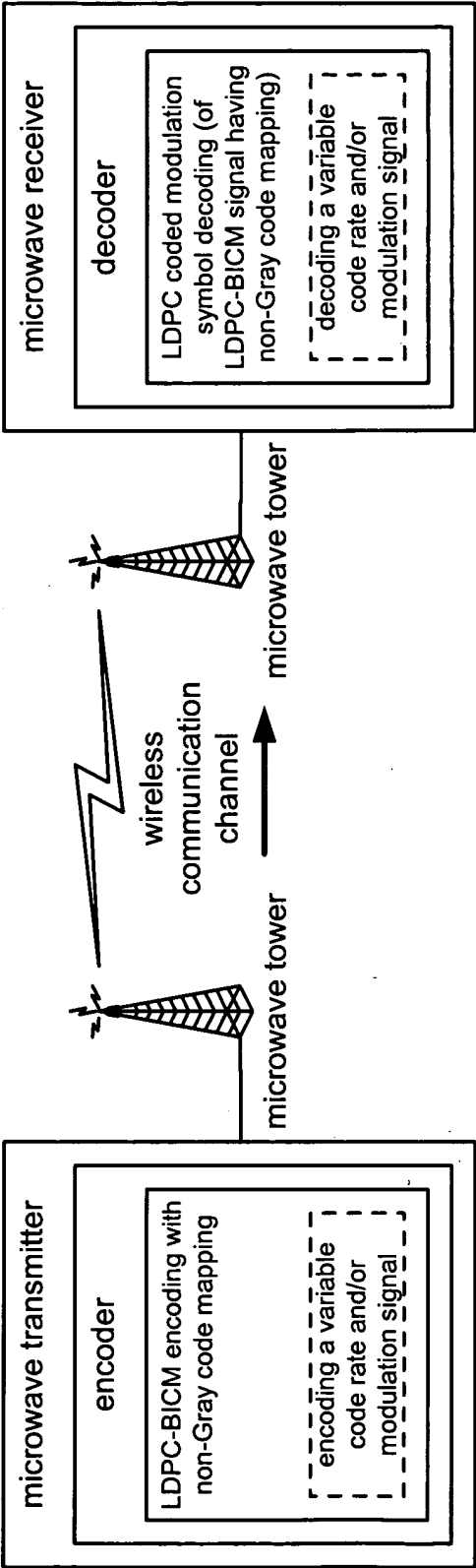
uni-directional cellular communication system
Fig. 3A



uni-directional cellular communication system
Fig. 3B

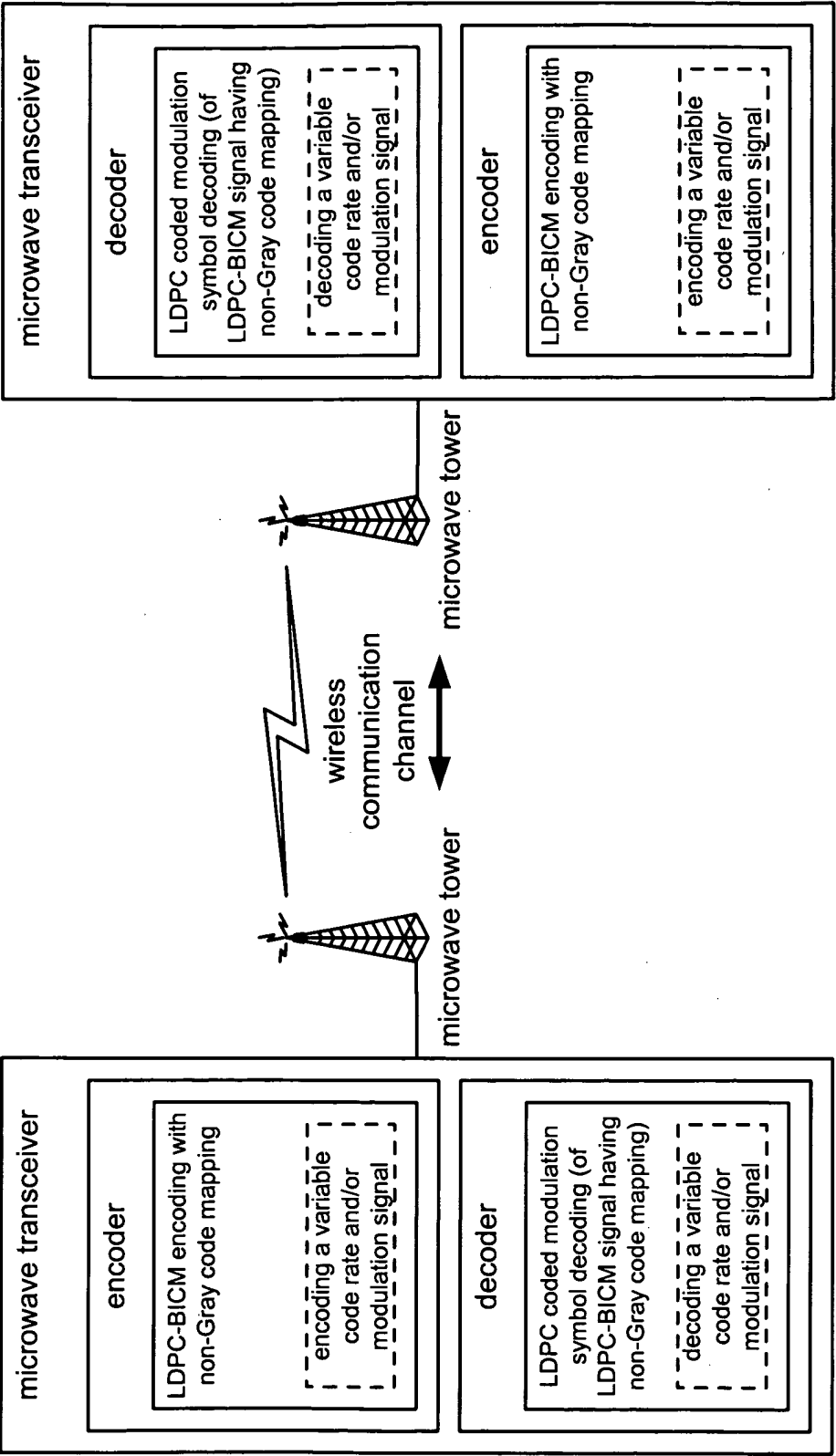


bi-directional cellular communication system
Fig. 4

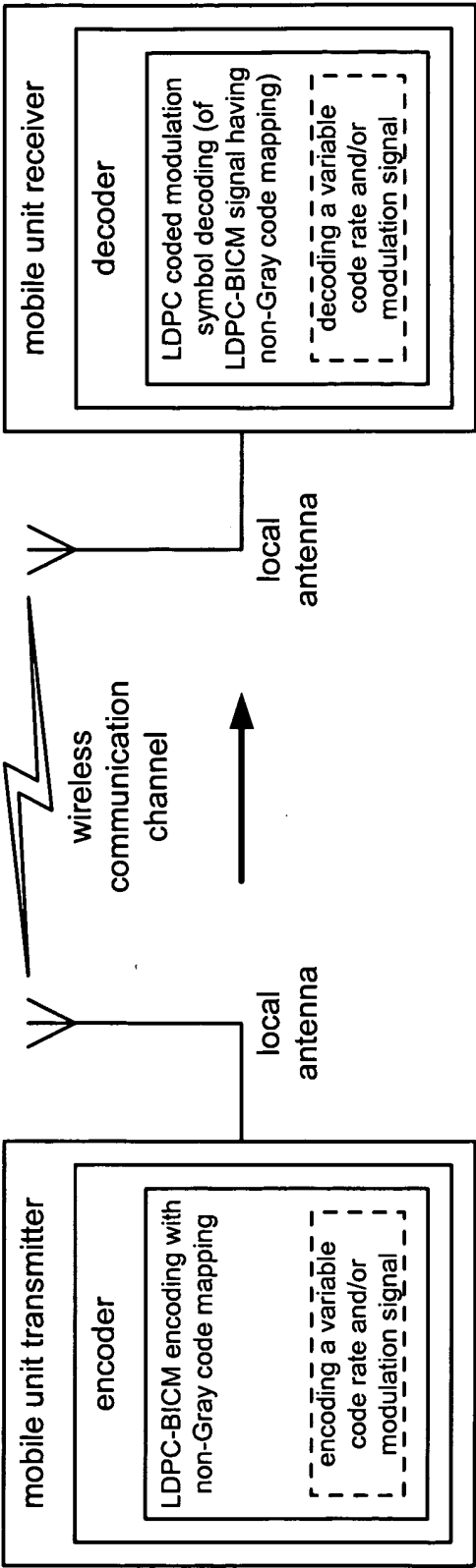


uni-directional microwave communication system

Fig. 5

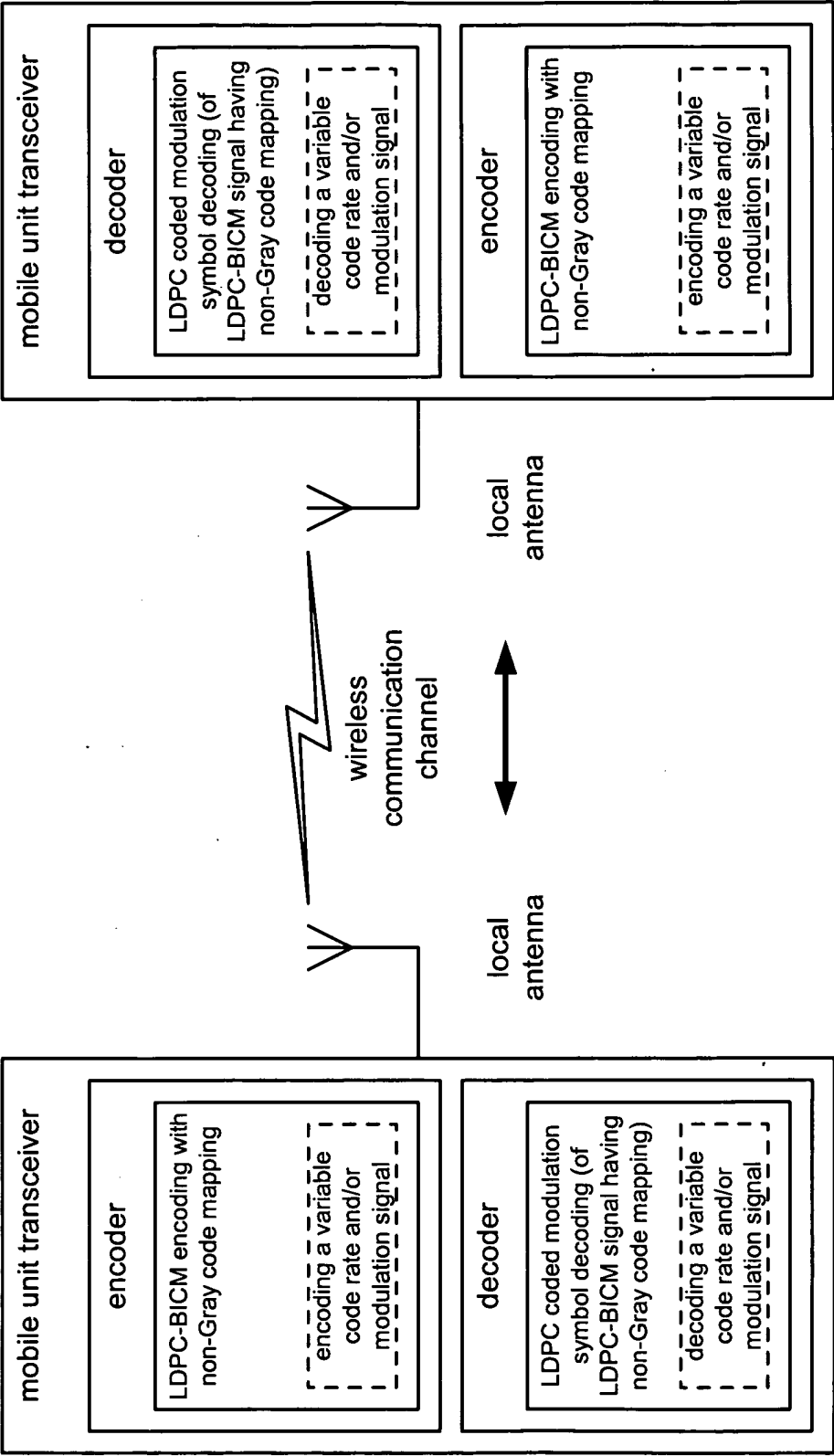


bi-directional microwave communication system
Fig. 6



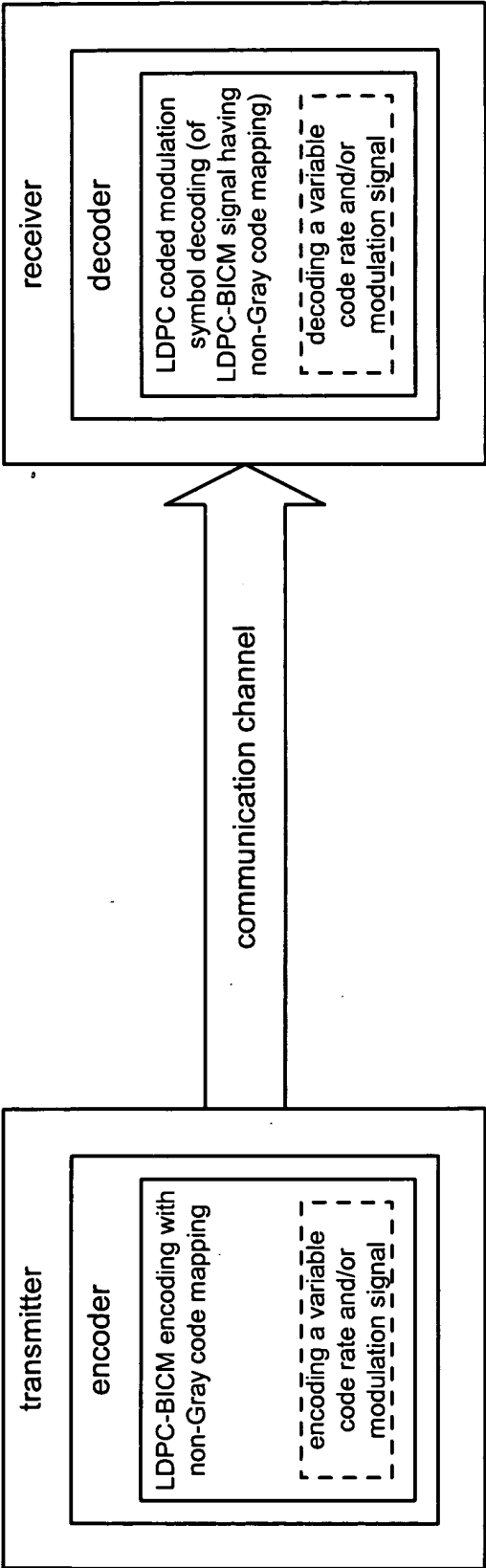
uni-directional point-to-point radio communication system

Fig. 7

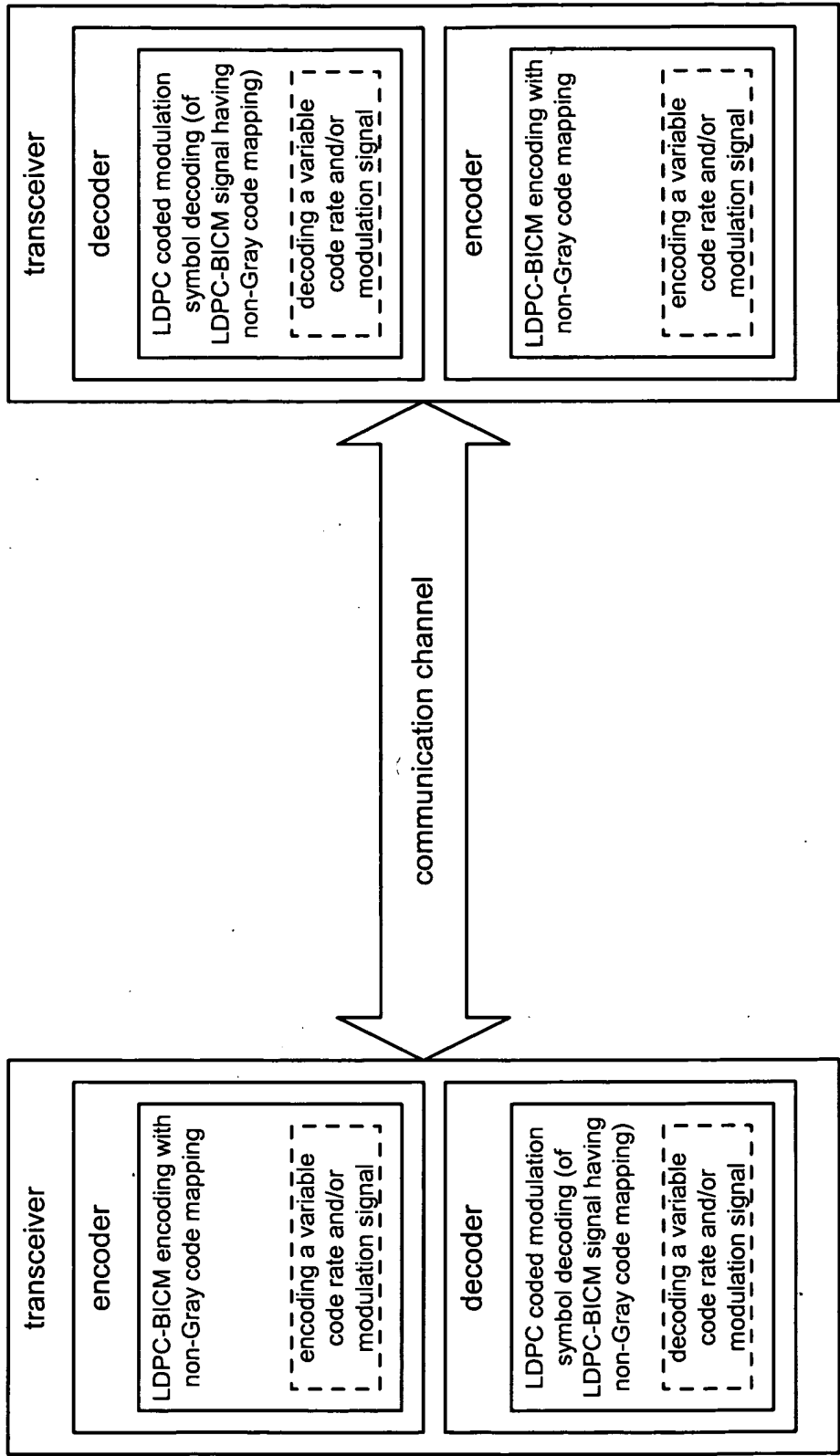


bi-directional point-to-point radio communication system

Fig. 8

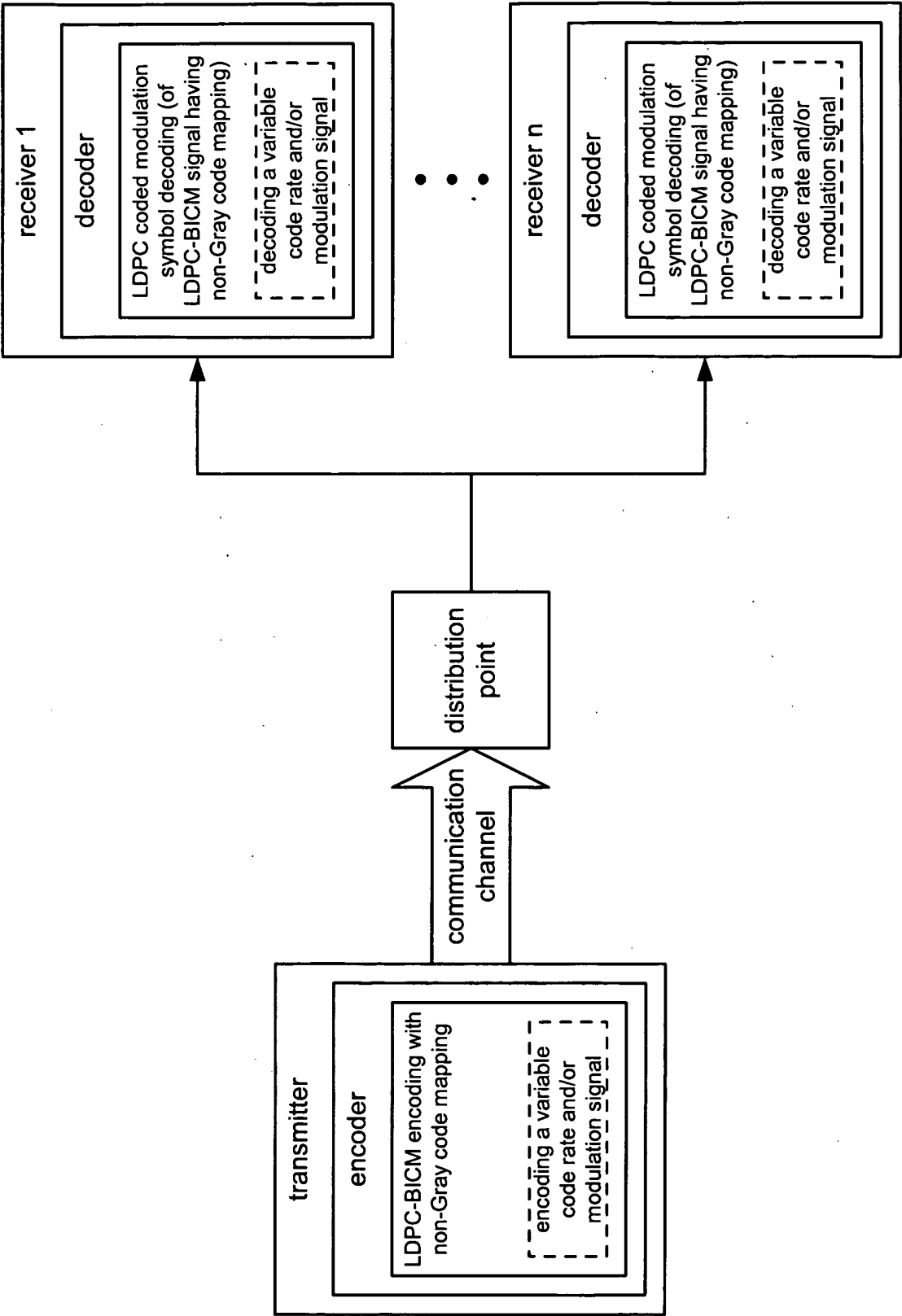


uni-directional communication system
Fig. 9



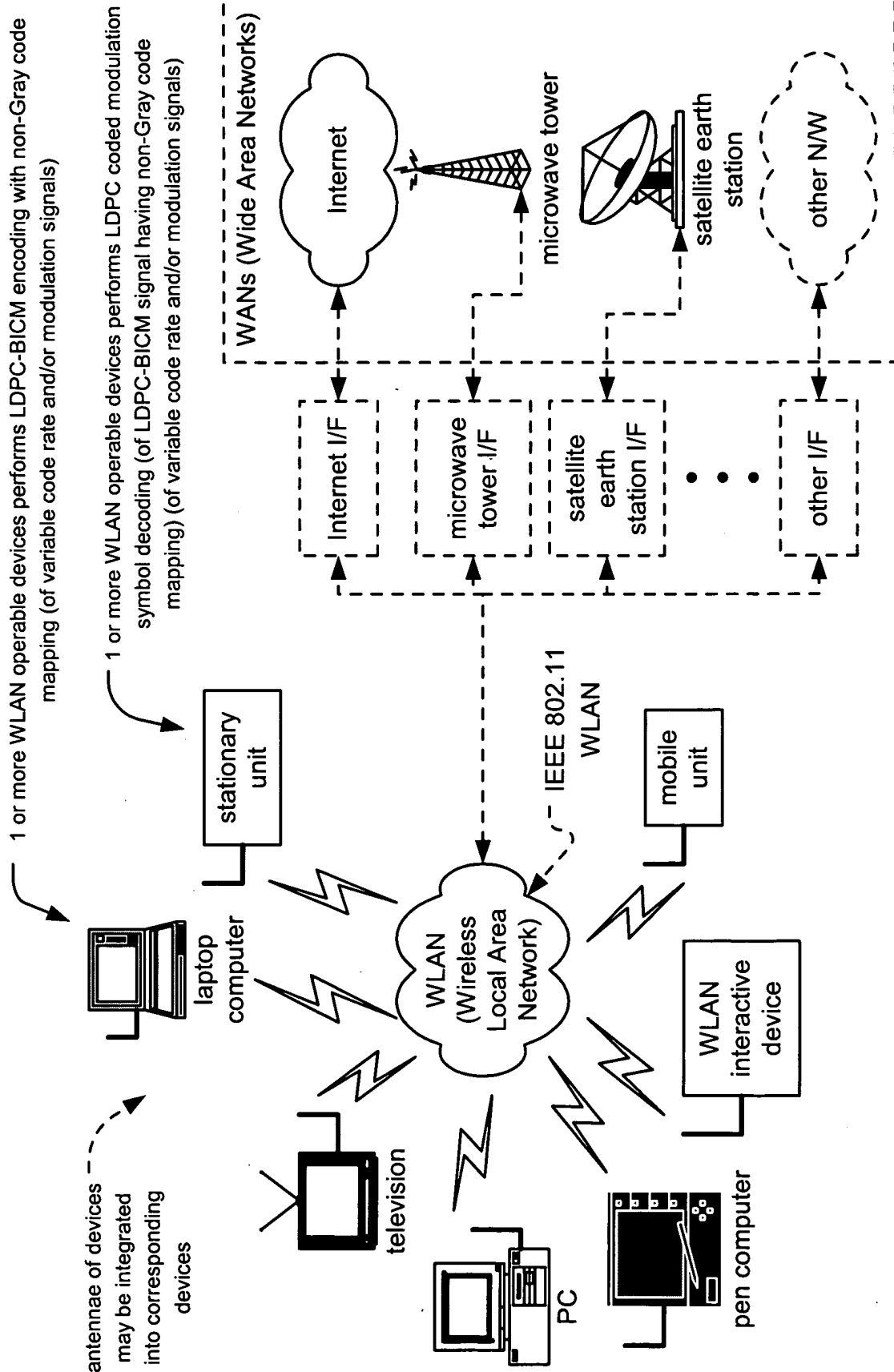
bi-directional communication system

Fig. 10



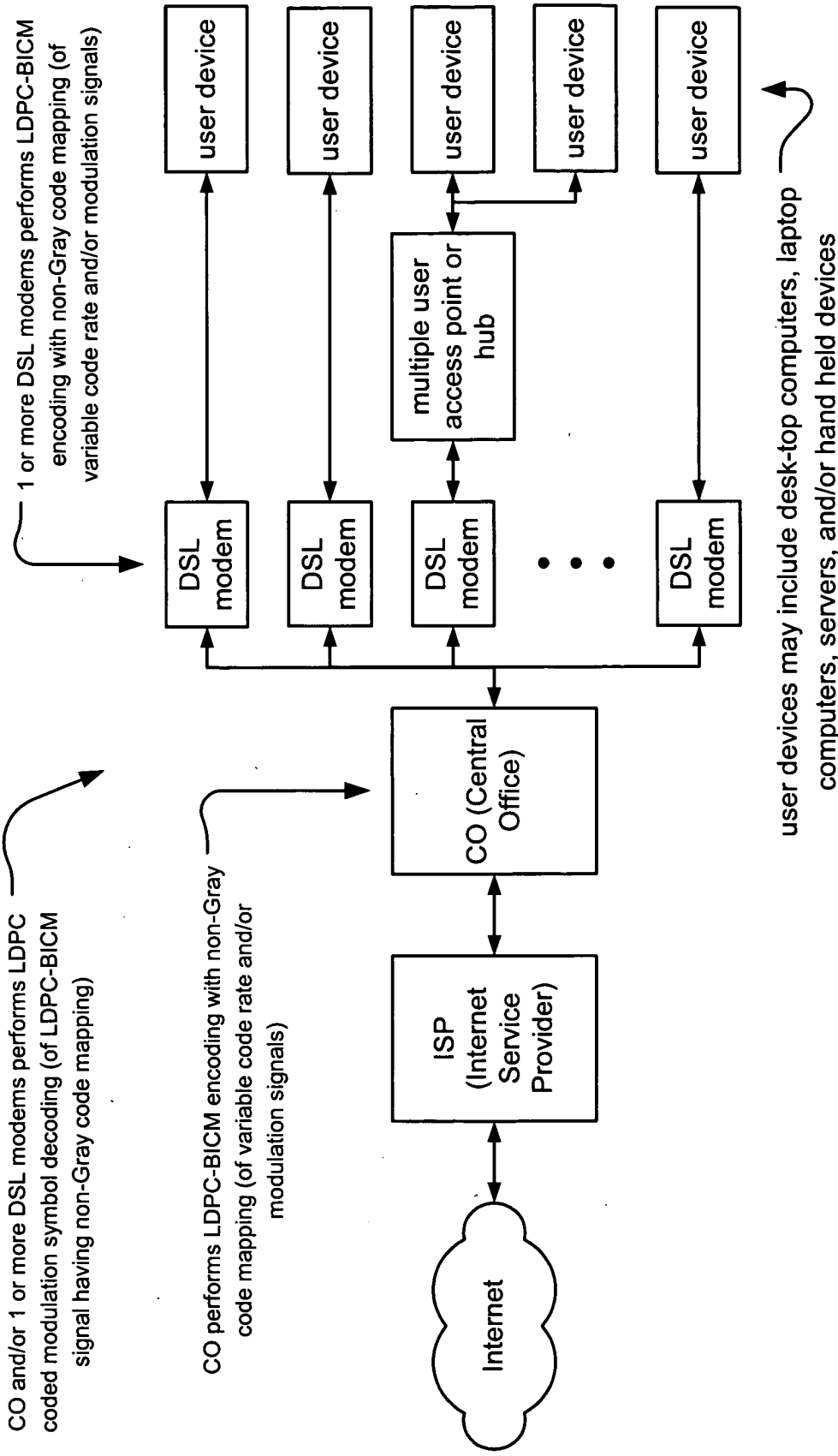
one to many communication system

Fig. 11



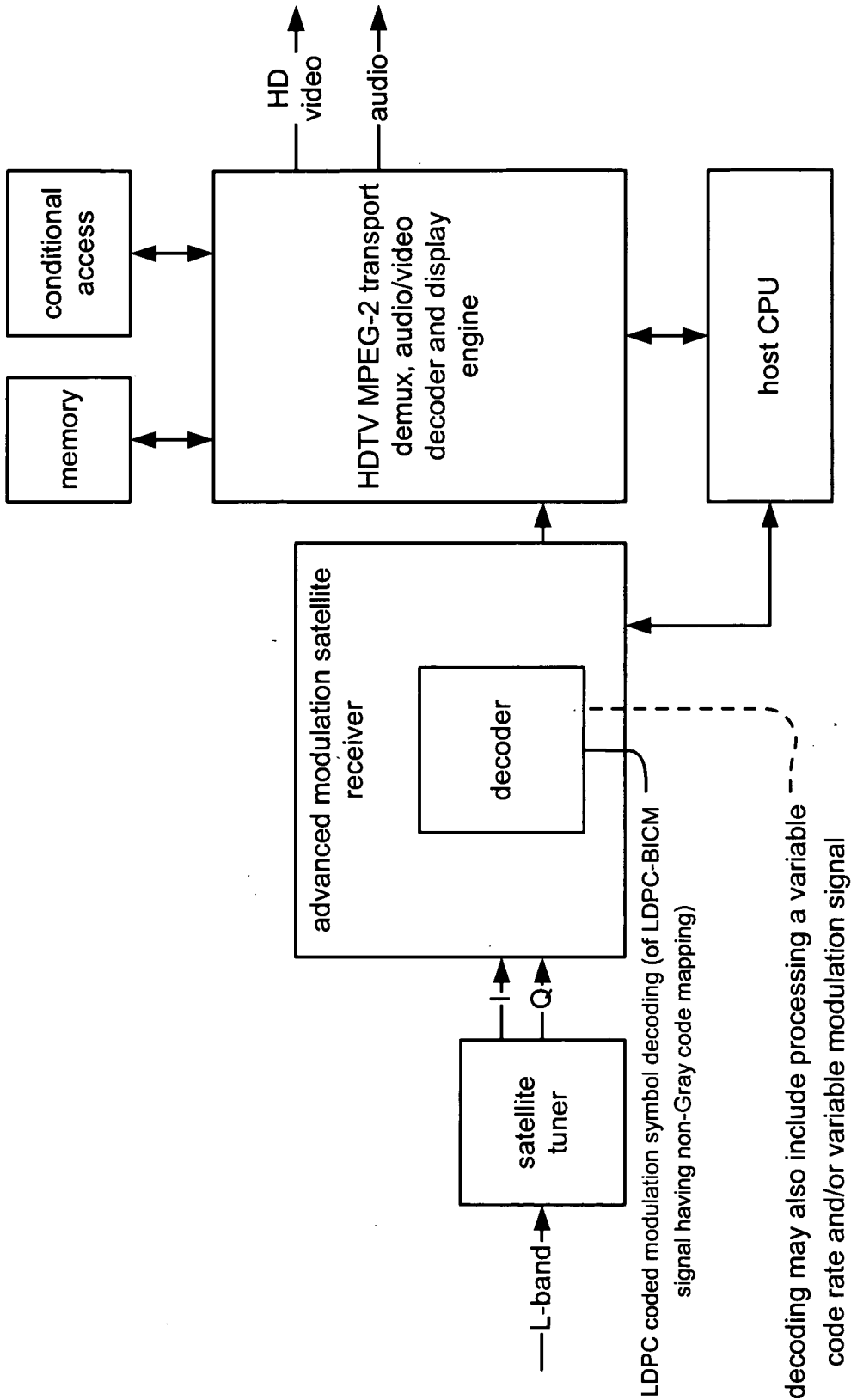
WLAN (Wireless Local Area Network) communication system

Fig. 12



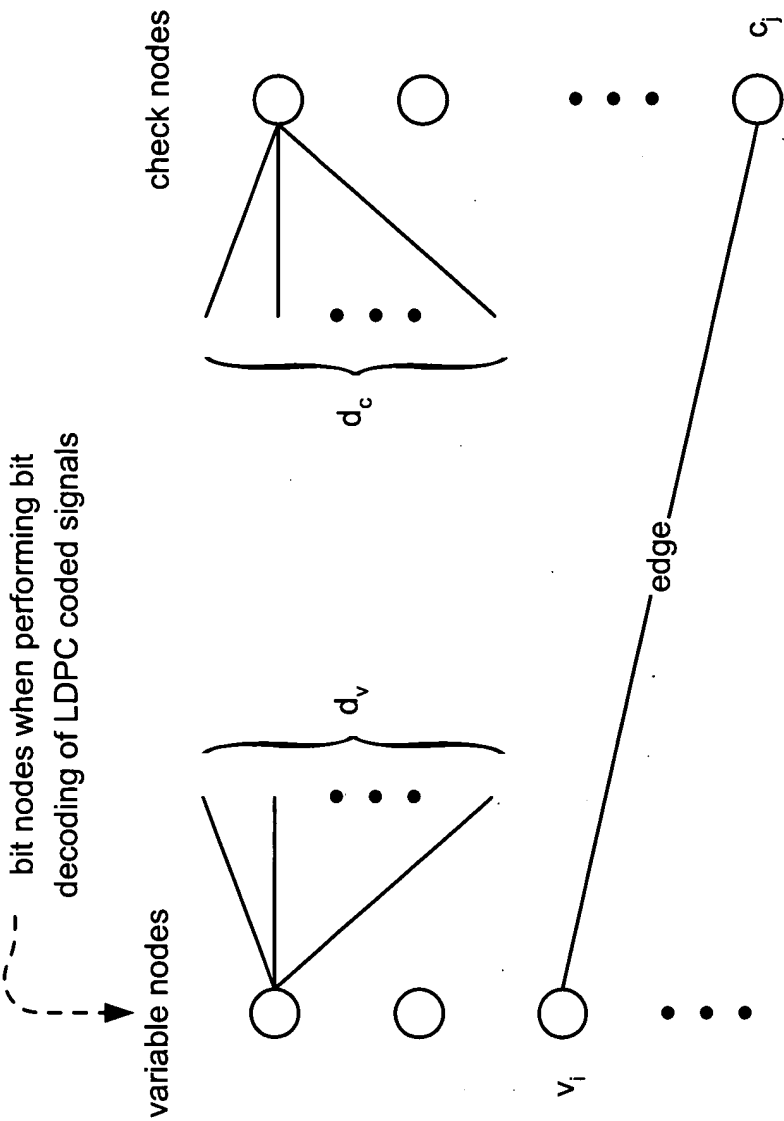
DSL (Digital Subscriber Line) communication system

Fig. 13



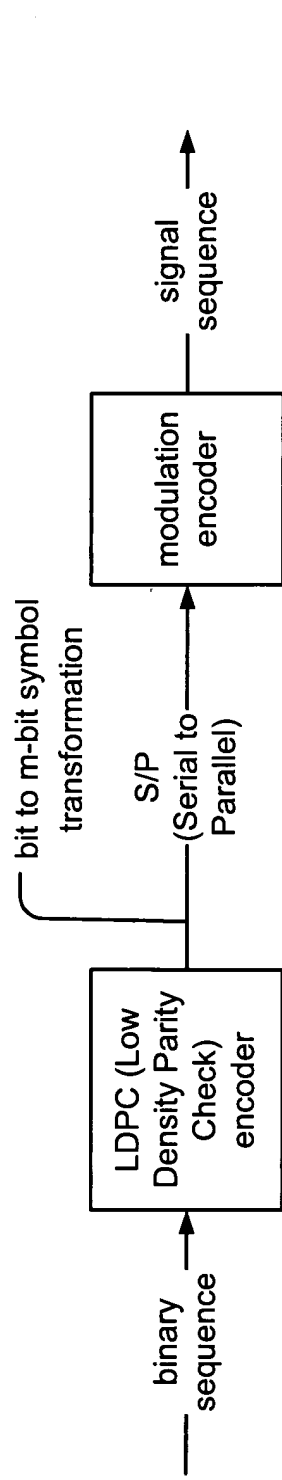
satellite receiver STB (Set Top Box) system

Fig. 15

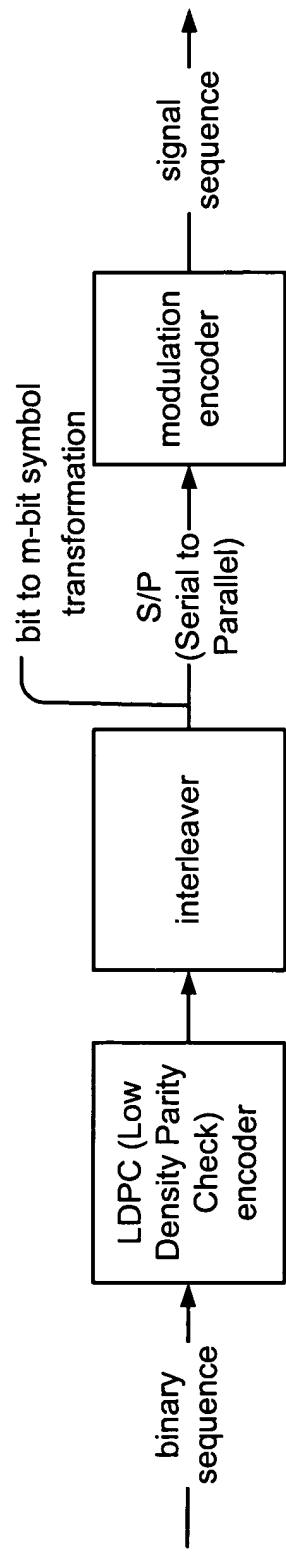


LDPC (Low Density Parity Check) code bipartite graph

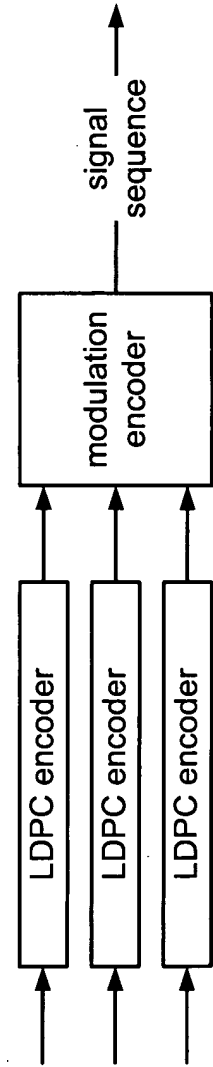
Fig. 16



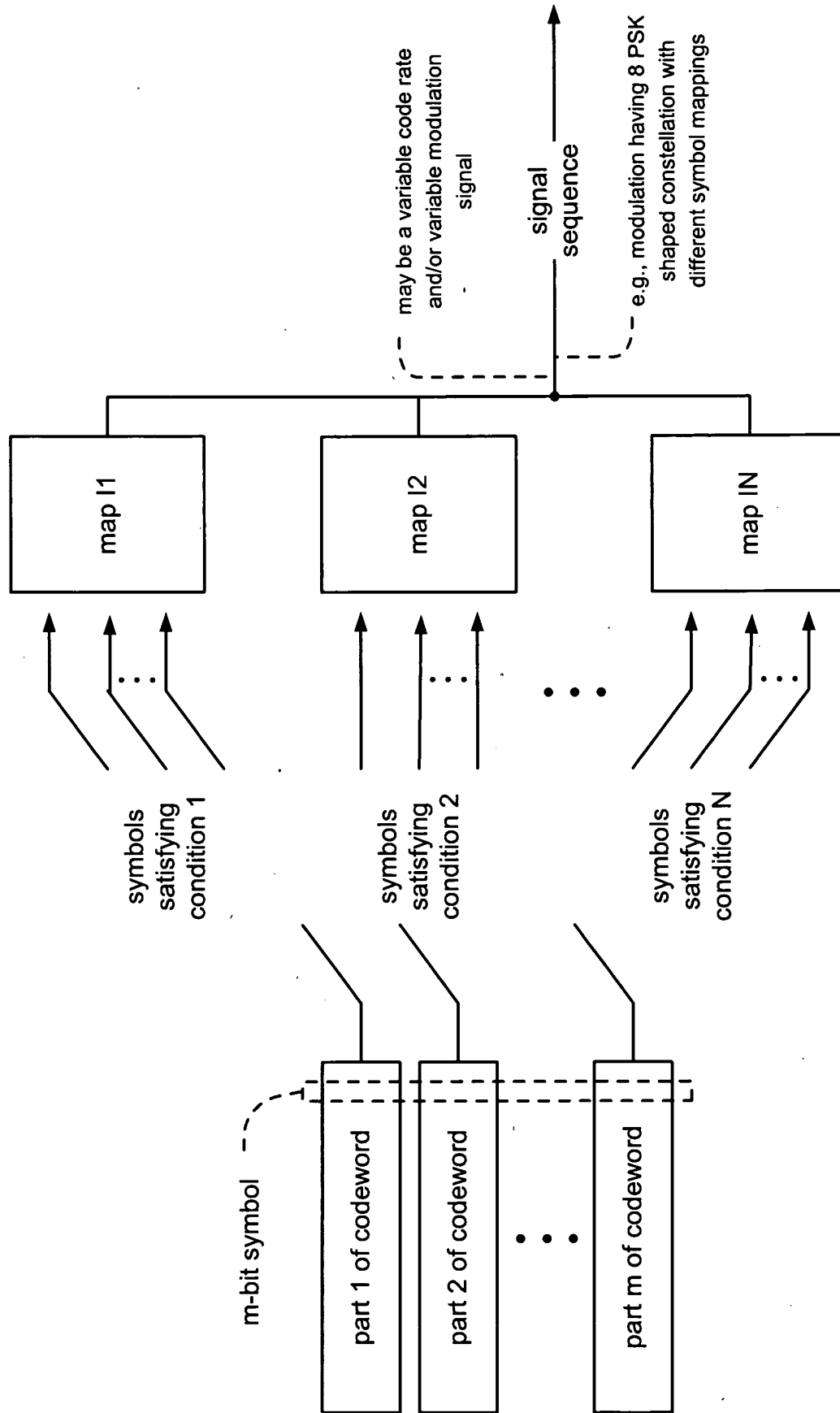
direct combining of LDPC (Low Density Parity Check) coding and modulation
Fig. 17A



BICM (Bit Interleaved Coded Modulation)
Fig. 17B

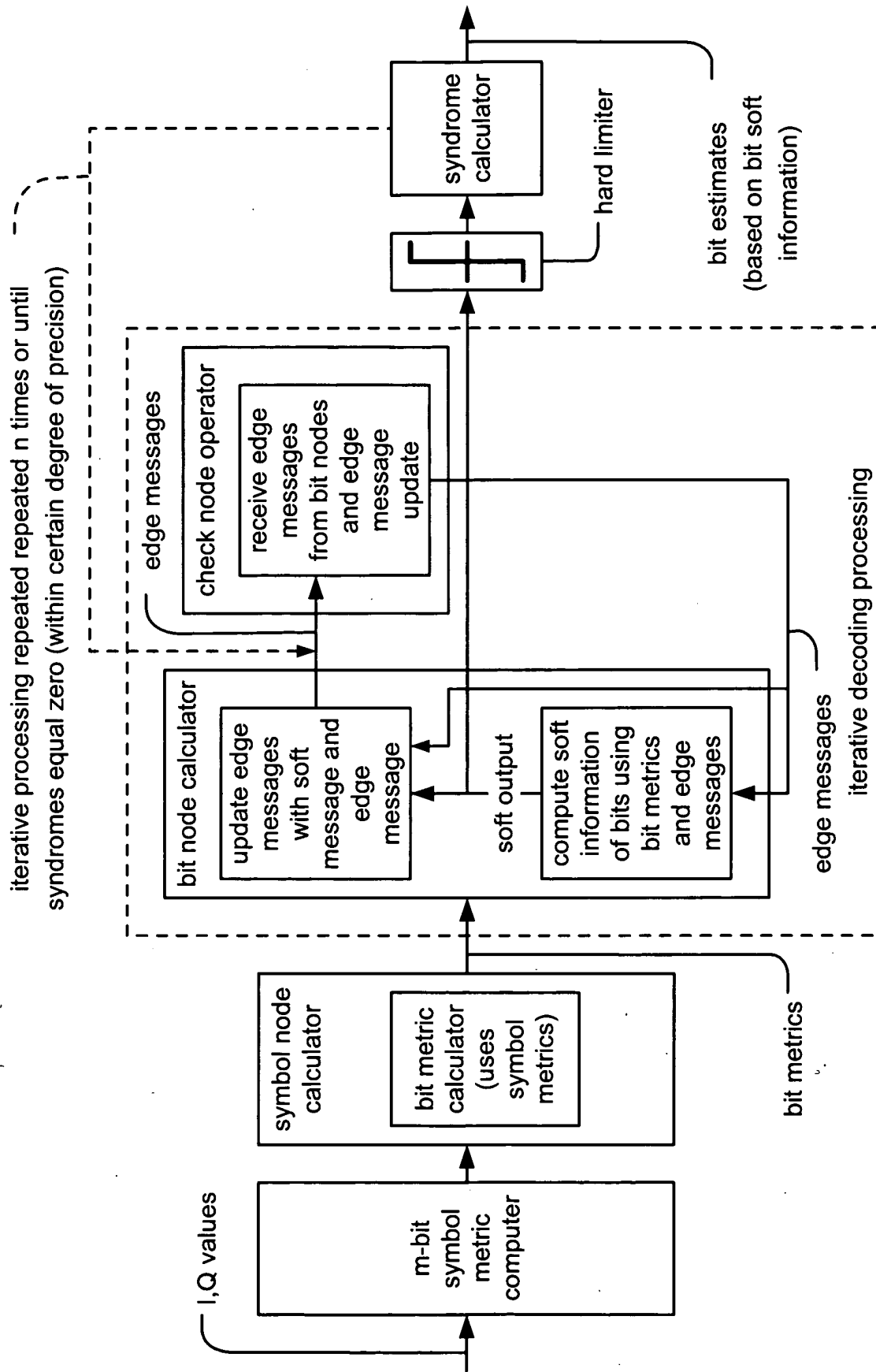


multilevel coded modulation
Fig. 17C



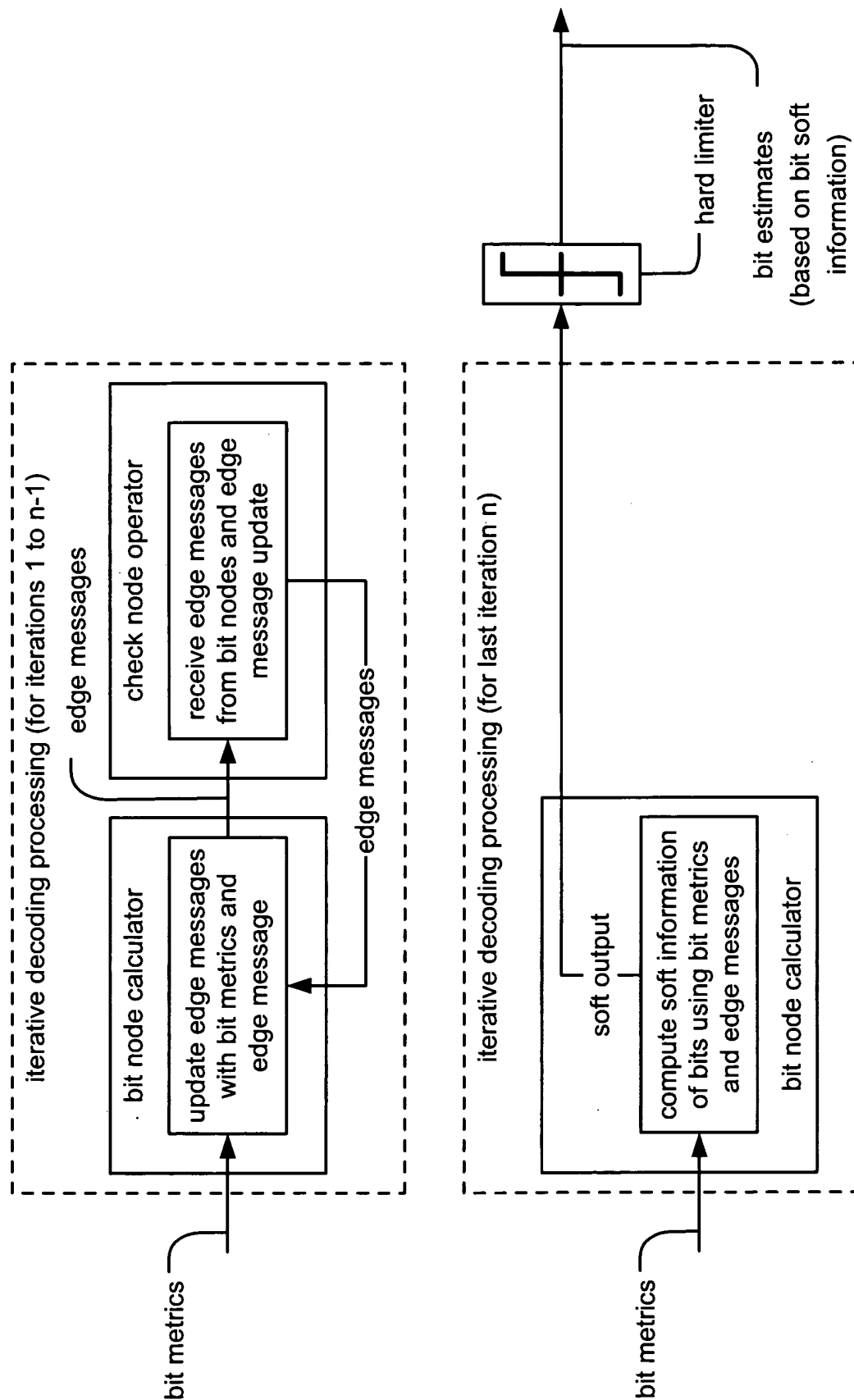
variable signal mapping LDPC (Low Density Parity Check) coded modulation system

Fig. 18



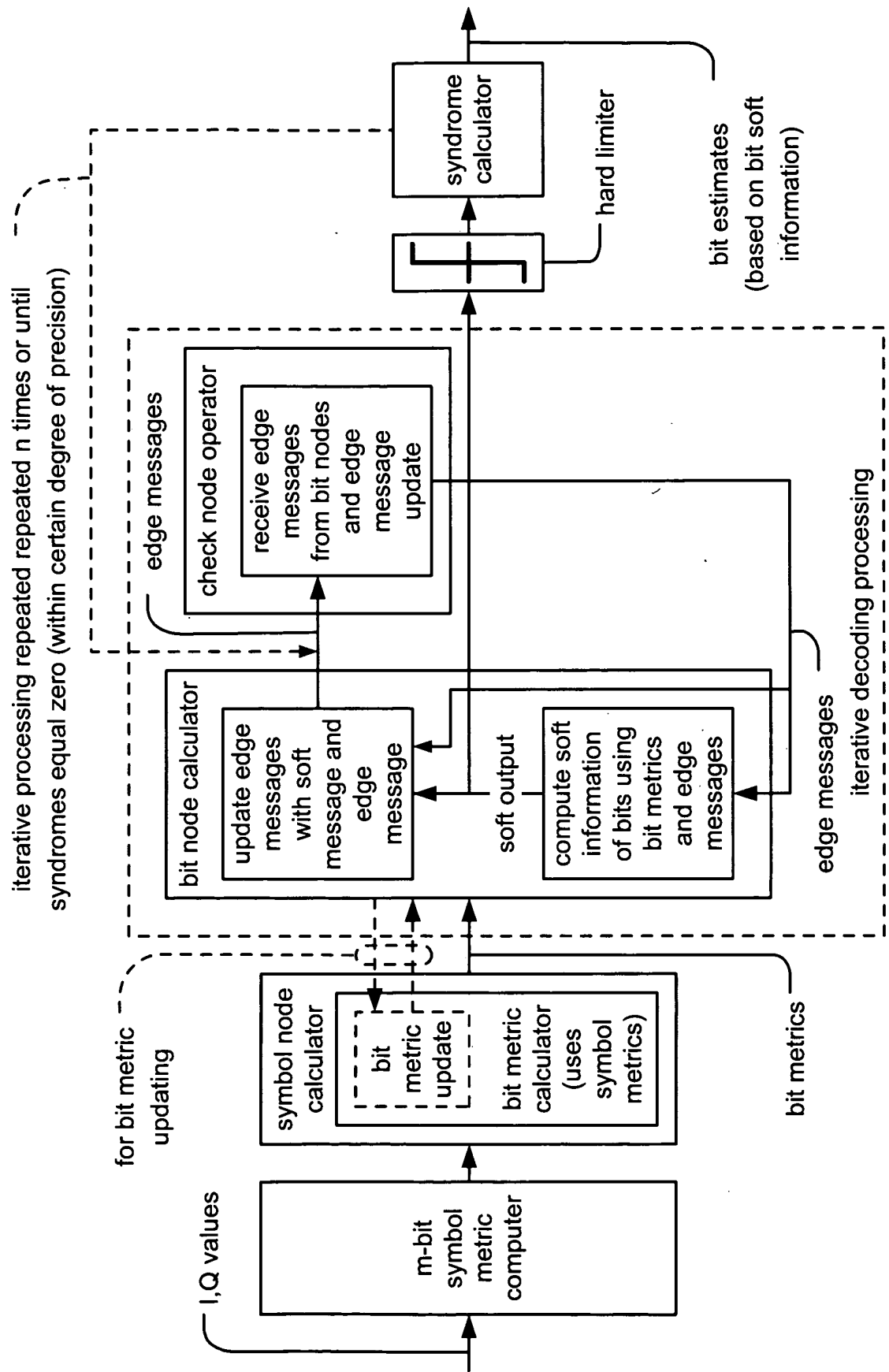
LDPC (Low Density Parity Check) coded modulation decoding functionality using bit metric

Fig. 19



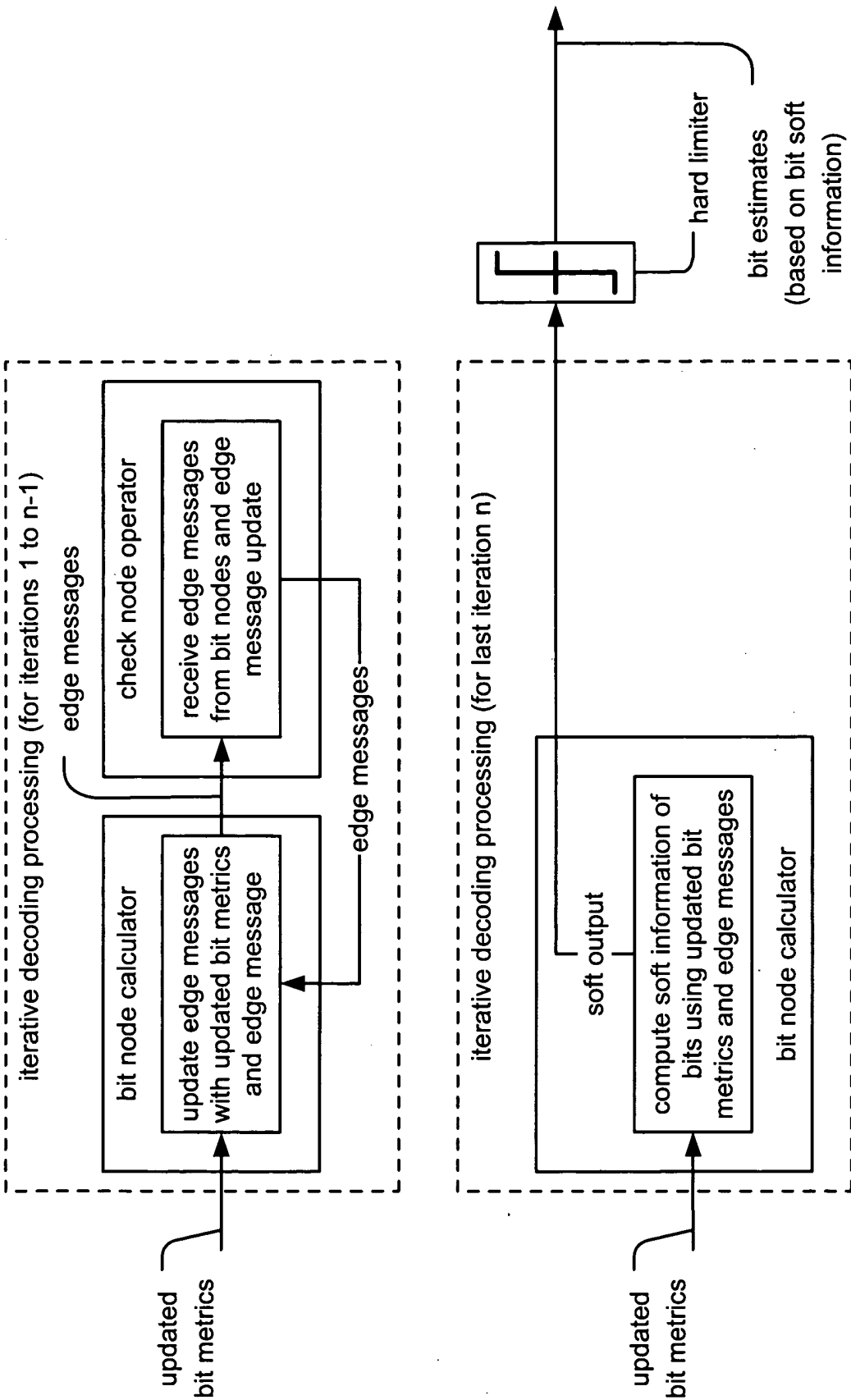
alternative LDPC coded modulation decoding functionality using bit metric (when performing n number of iterations)

Fig. 20



LDPC (Low Density Parity Check) coded modulation decoding functionality using bit metric (with bit metric updating)

Fig. 21



alternative LDPC coded modulation decoding functionality using bit metric (with bit metric updating) (when performing n number of iterations)

Fig. 22

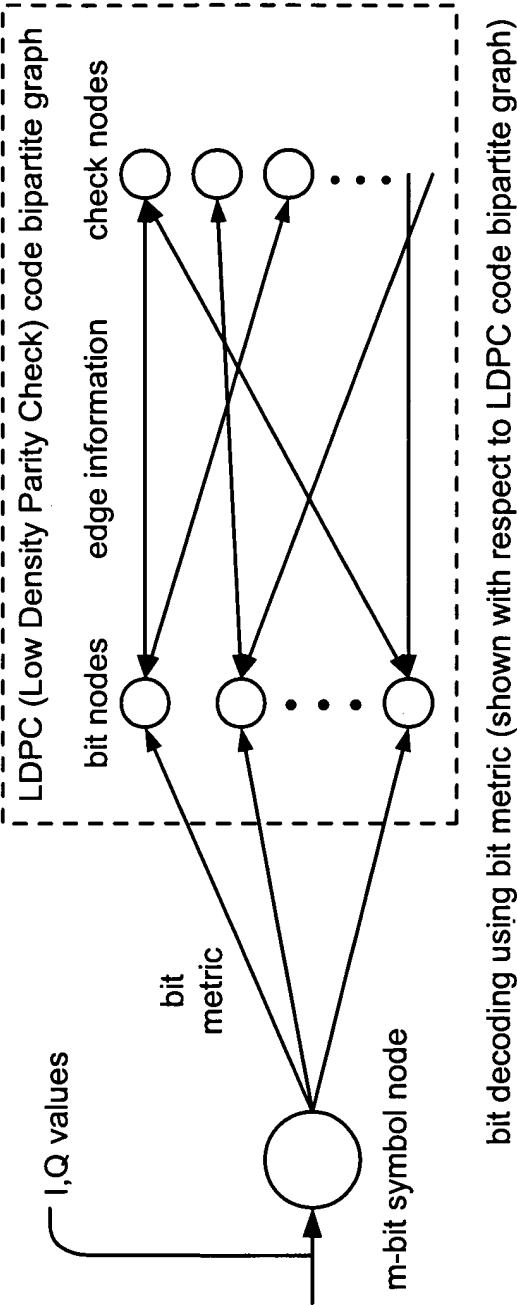


Fig. 23A

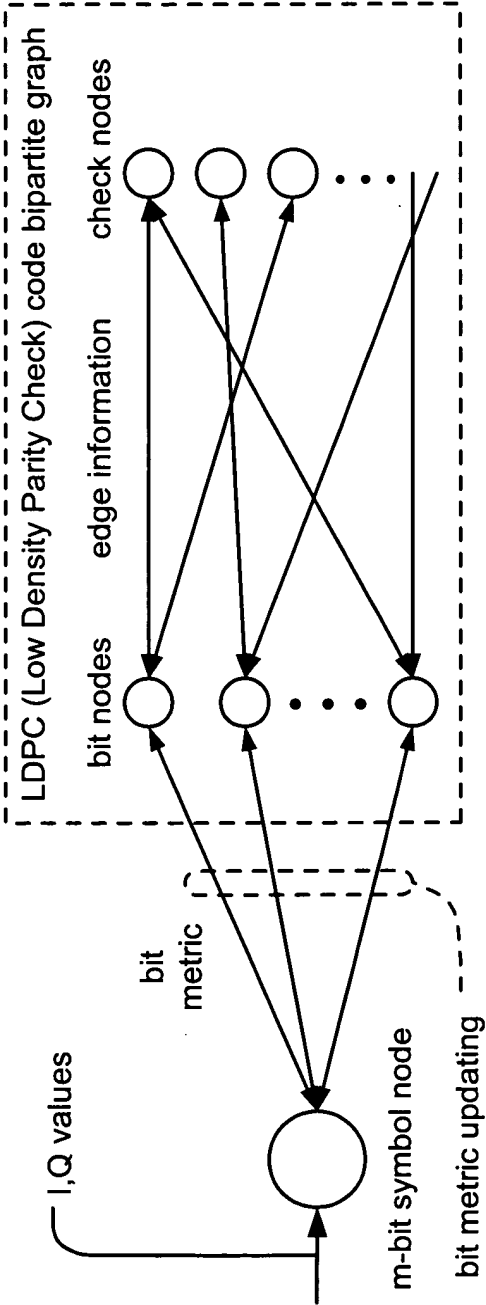


Fig. 23B

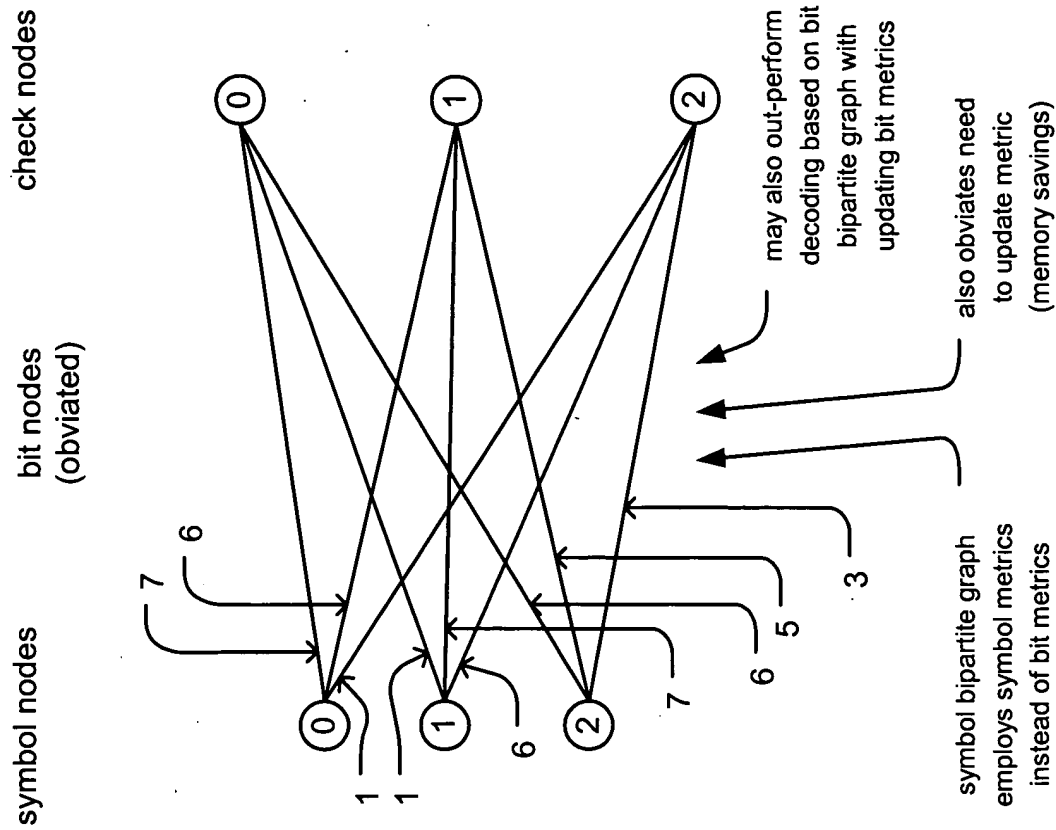


Fig. 24B

LDPC coded modulation bipartite graph with symbol nodes connected directly to check nodes (with labeled edges)

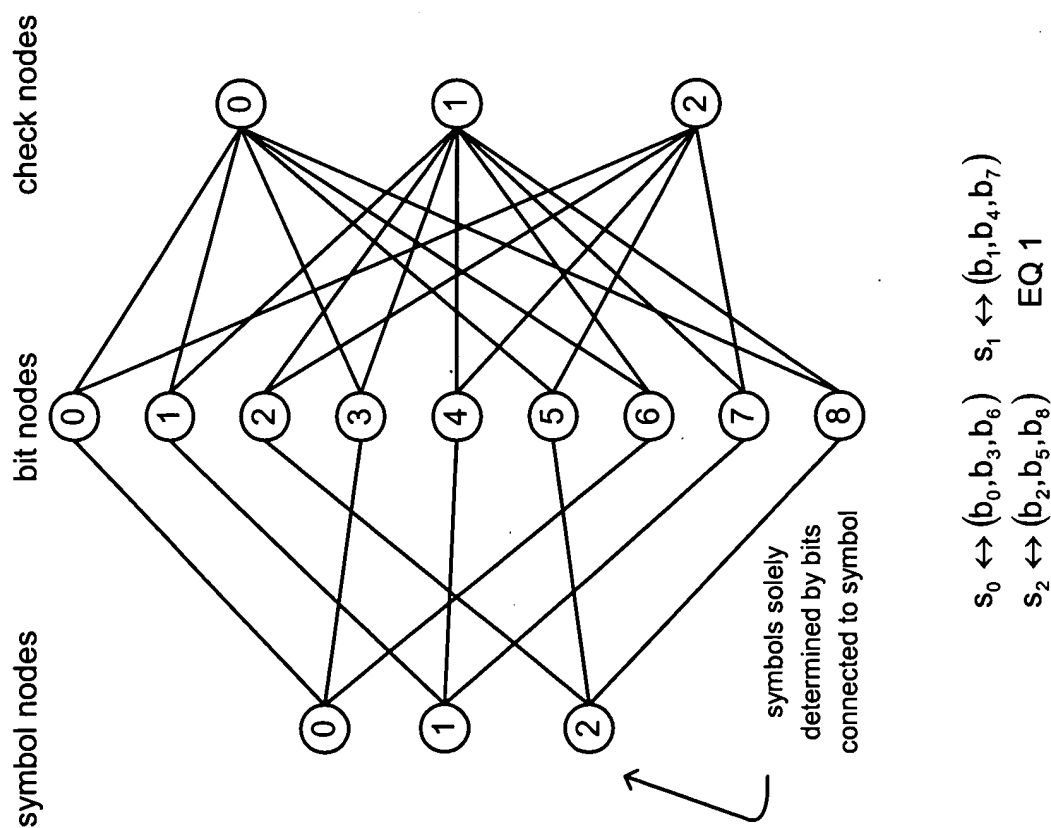
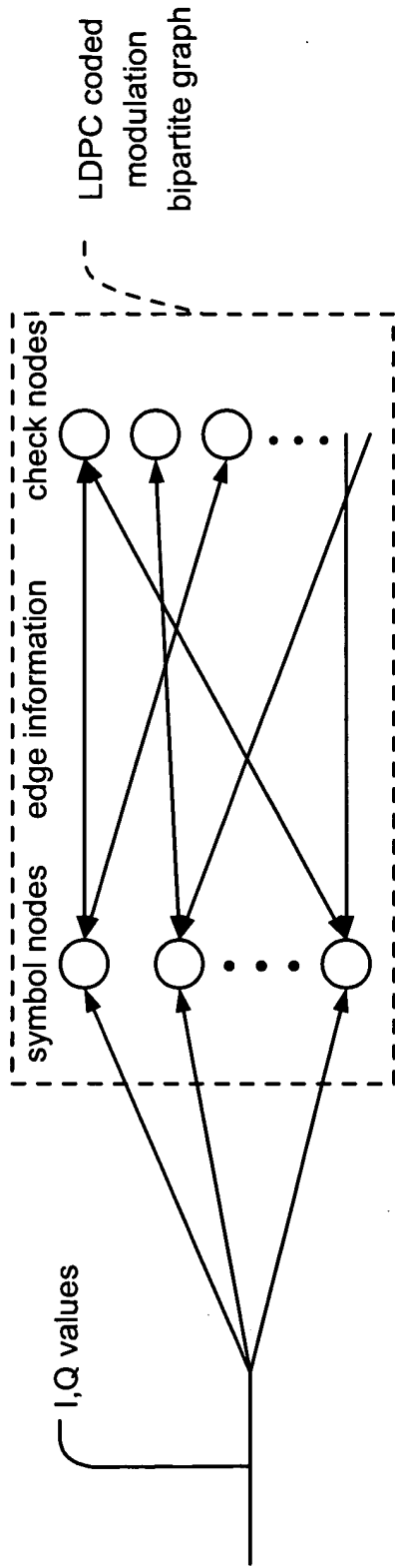


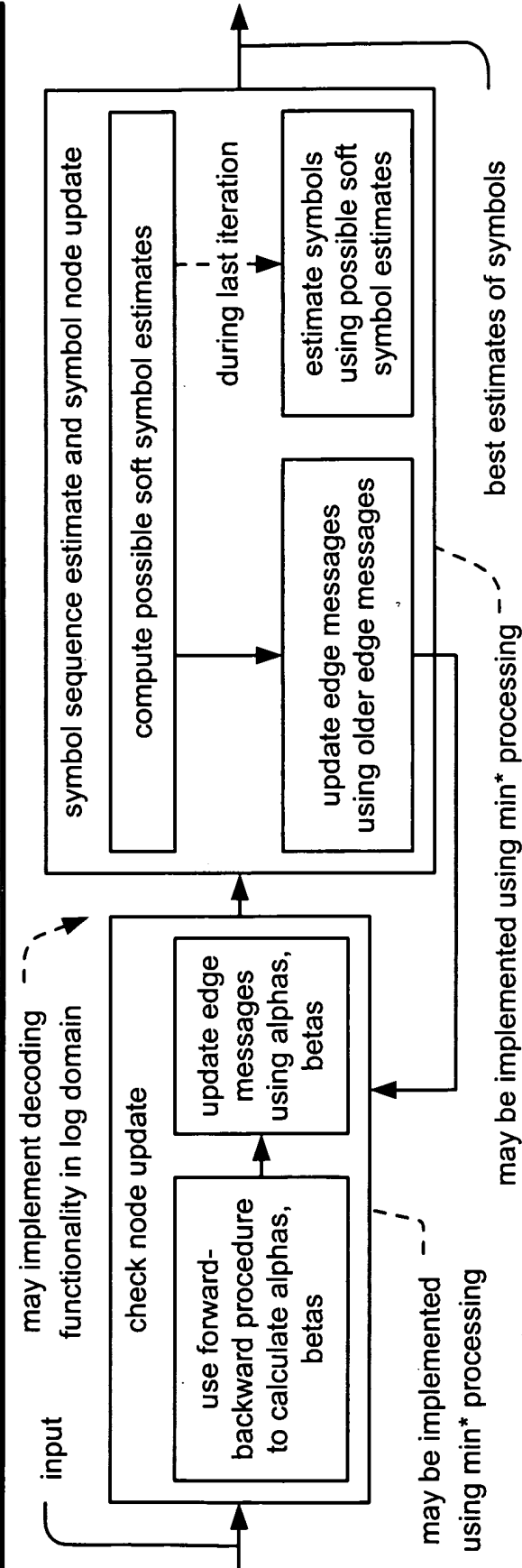
Fig. 24A

LDPC (Low Density Parity Check) coded modulation tripartite graph with symbol nodes connected to bit nodes



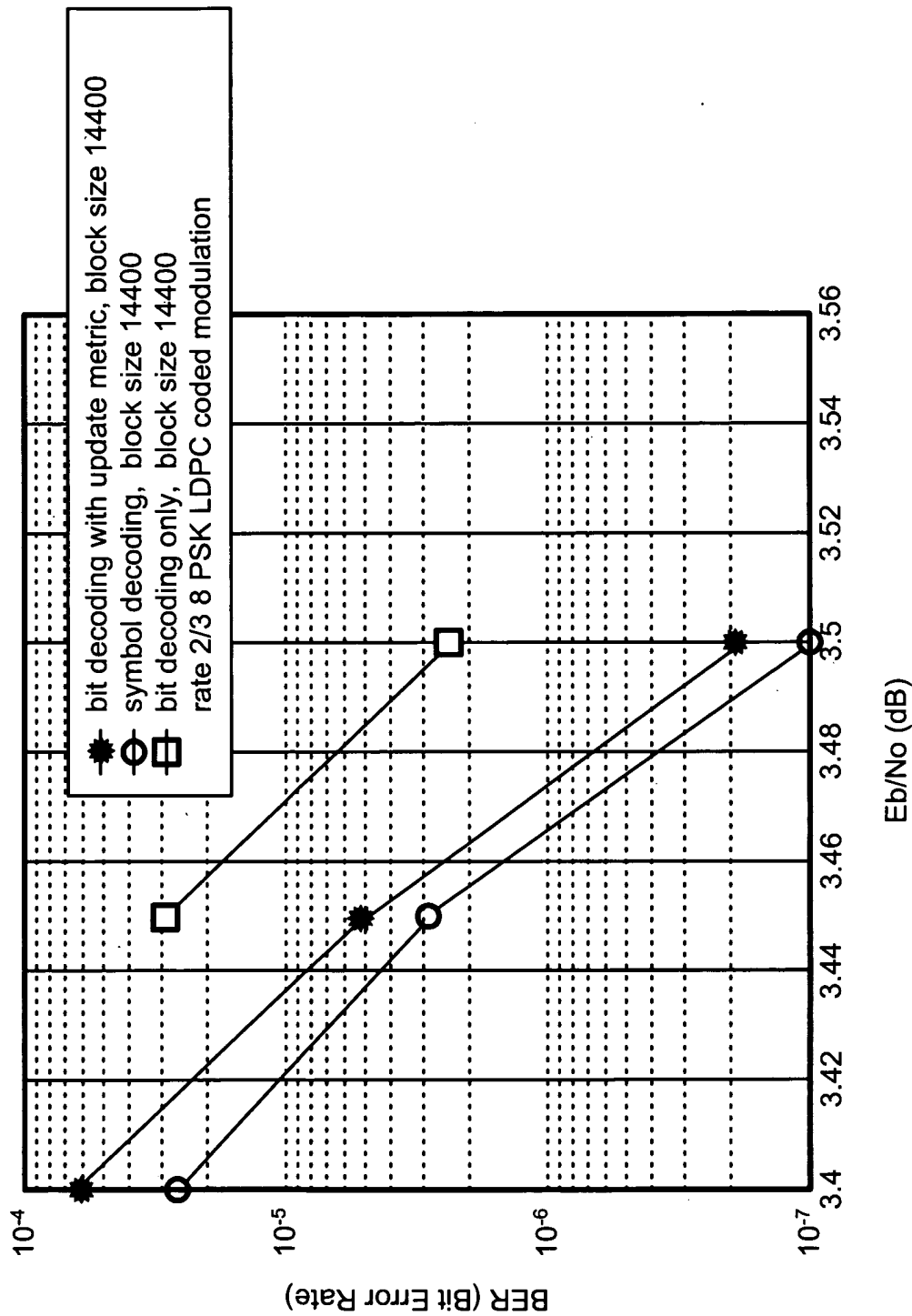
symbol decoding (shown with respect to LDPC (Low Density Parity Check) coded modulation bipartite graph)

Fig. 25A



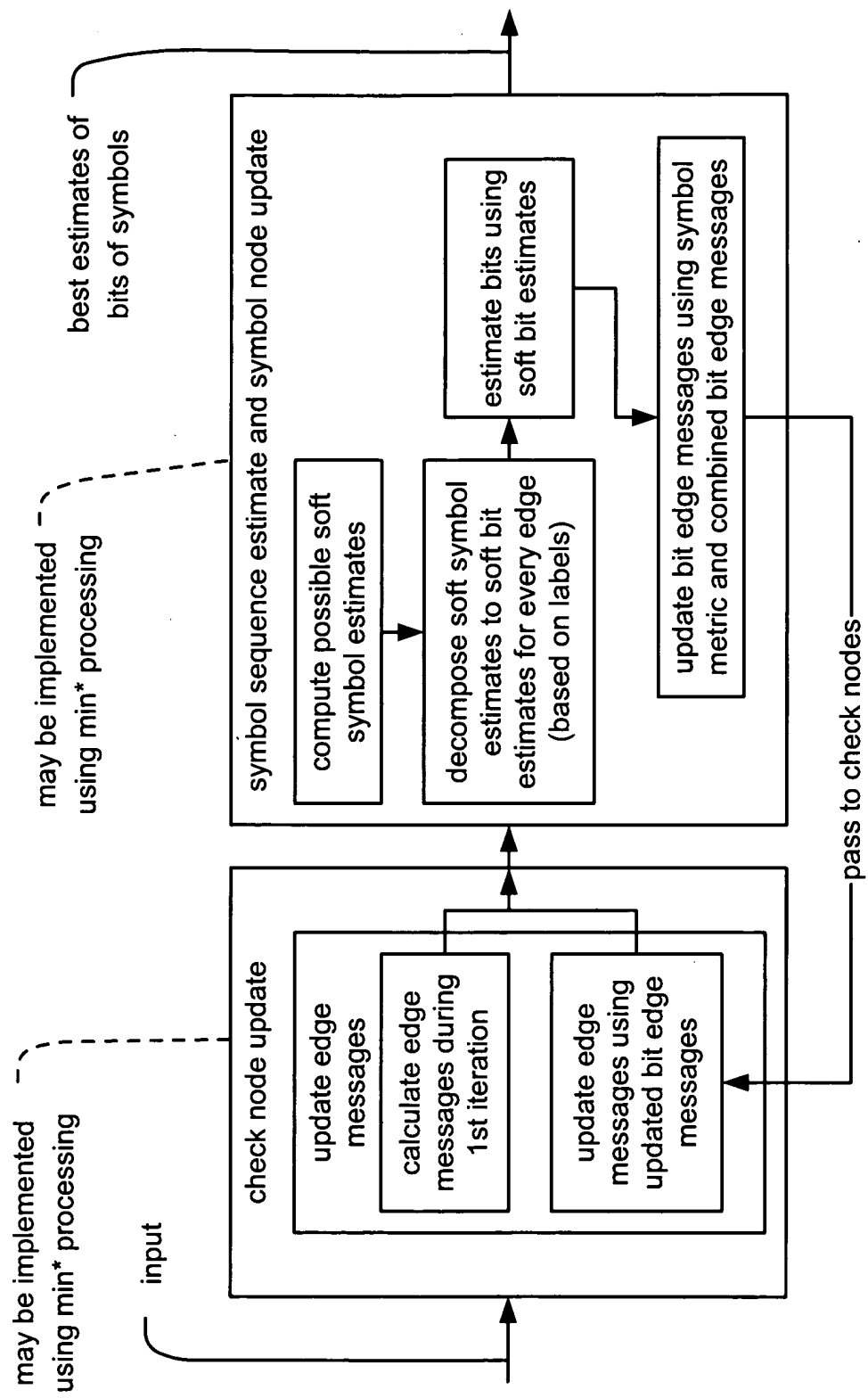
symbol decoding functionality (supported with LDPC (Low Density Parity Check) coded modulation bipartite graph)

Fig. 25B



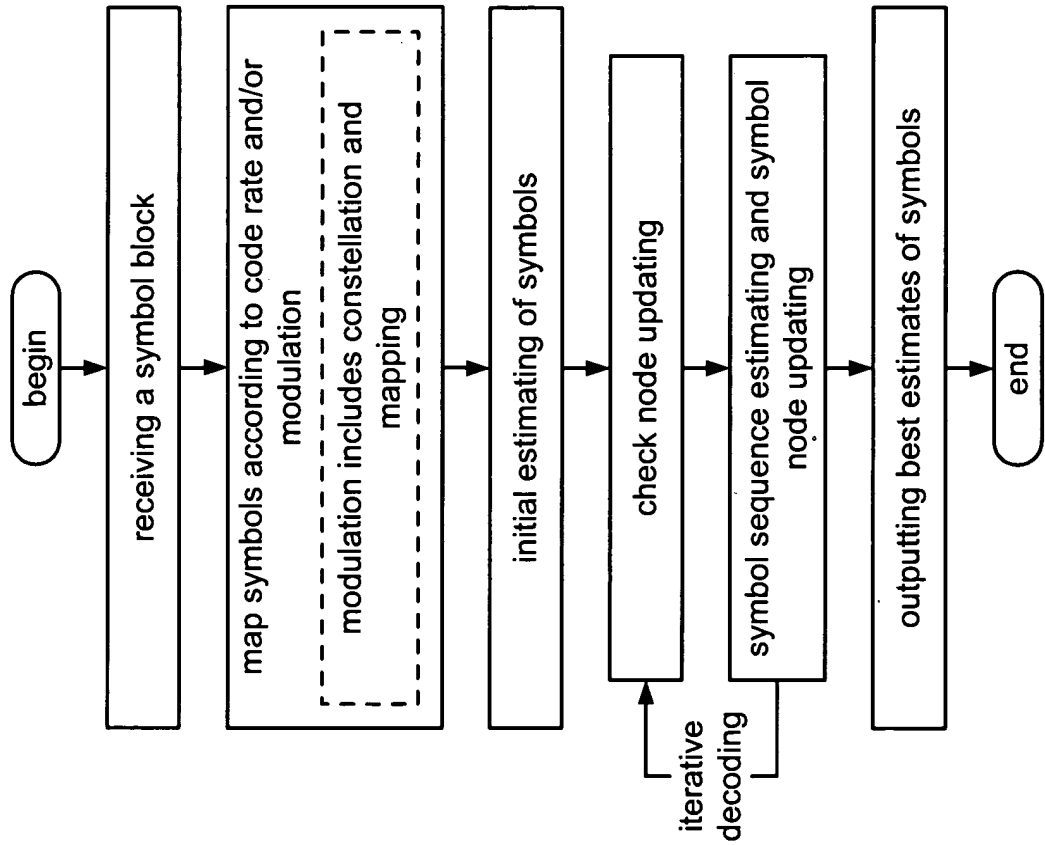
performance comparison of symbol vs. bit decoding of LDPC (Low Density Parity Check) coded modulation signals

Fig. 26



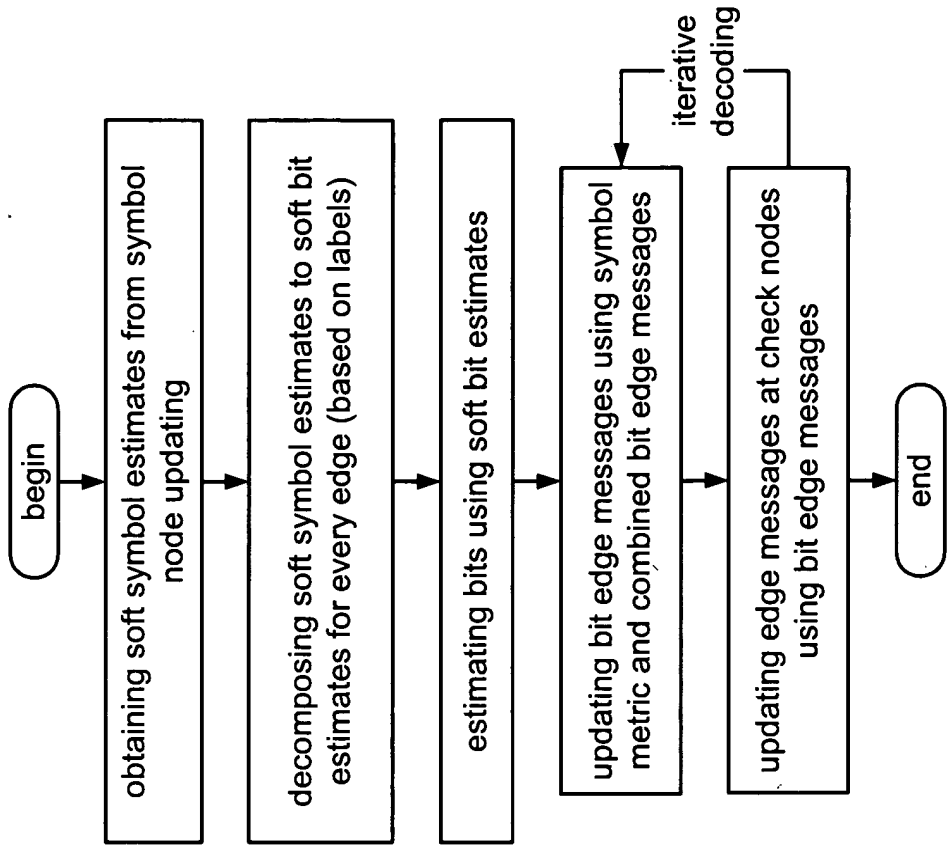
hybrid decoding functionality that reduces complexity of symbol decoding of LDPC coded modulation signals

Fig. 27



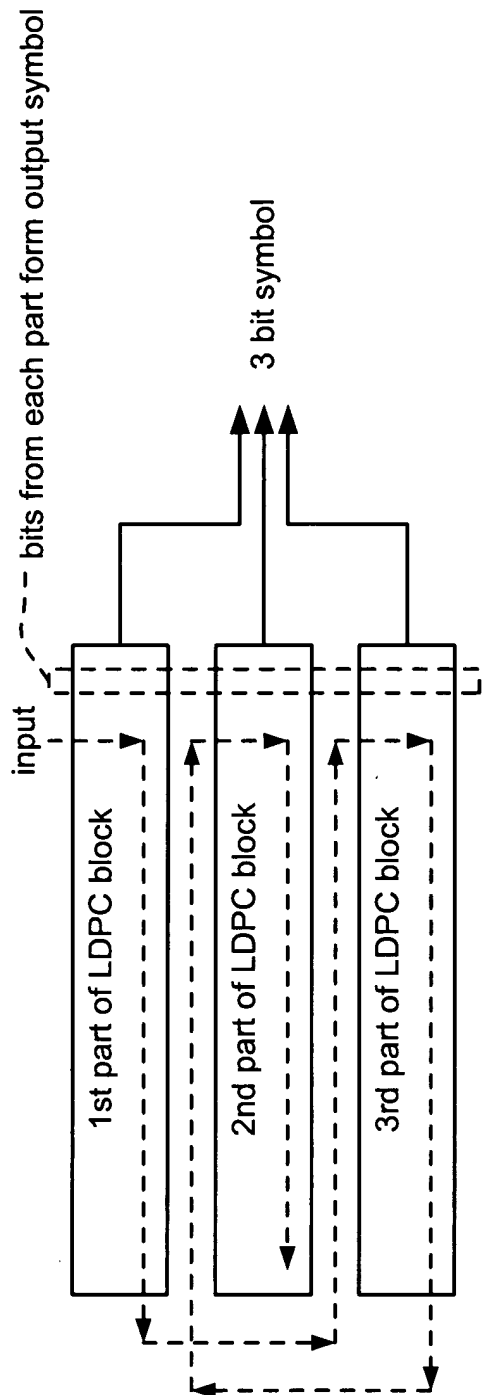
method for symbol decoding of LDPC coded modulation signals

Fig. 28A



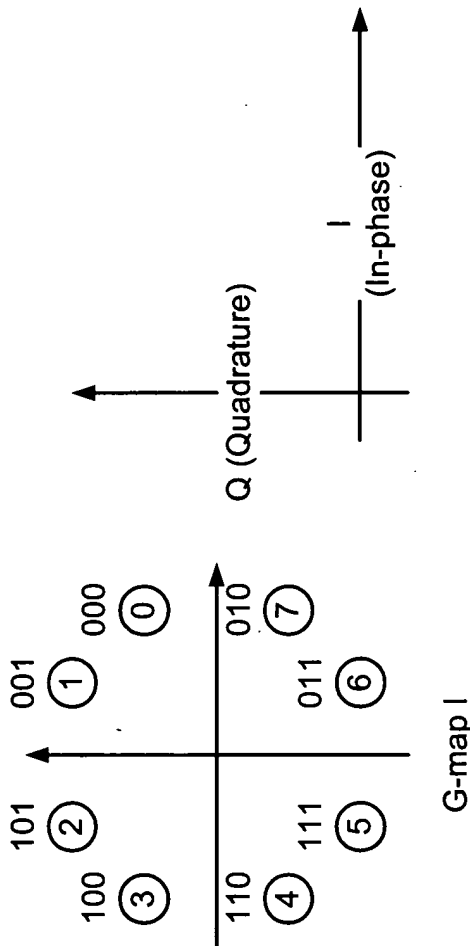
hybrid decoding method of LDPC coded modulation signals

Fig. 28B



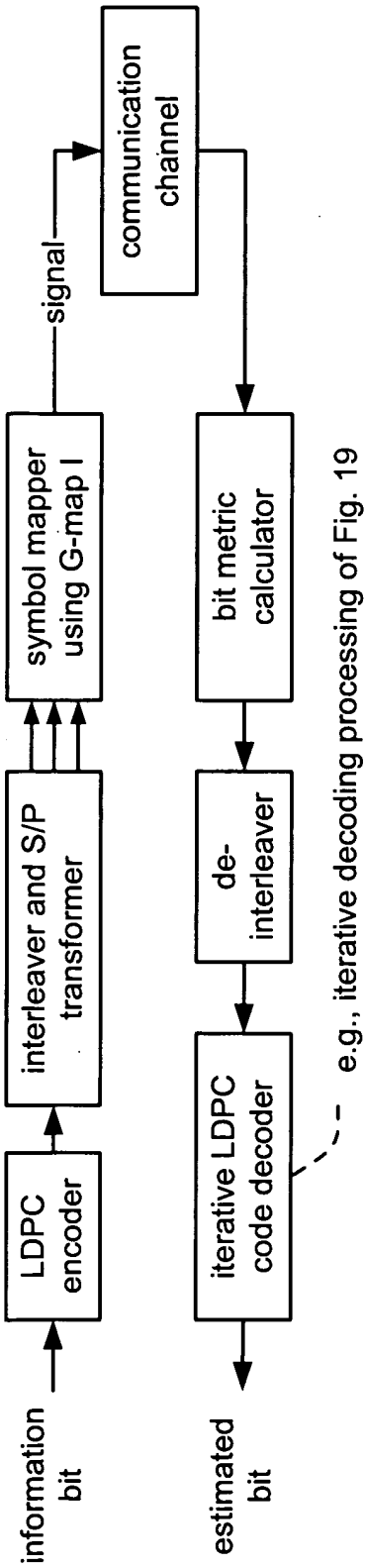
interleaver and S/P (Serial to Parallel) transformer as performed within an LDPC-BICM system

Fig. 29A



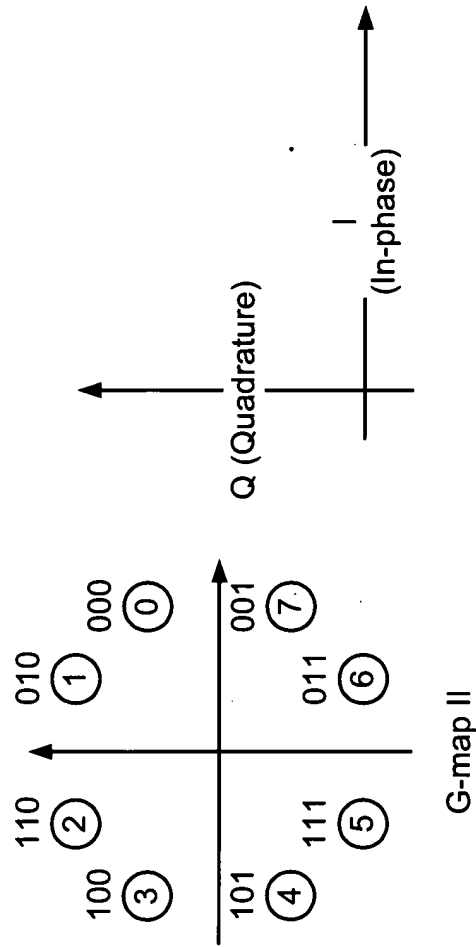
G-map I (Gray code map) (shown using 8 PSK shaped constellation)

Fig. 29B



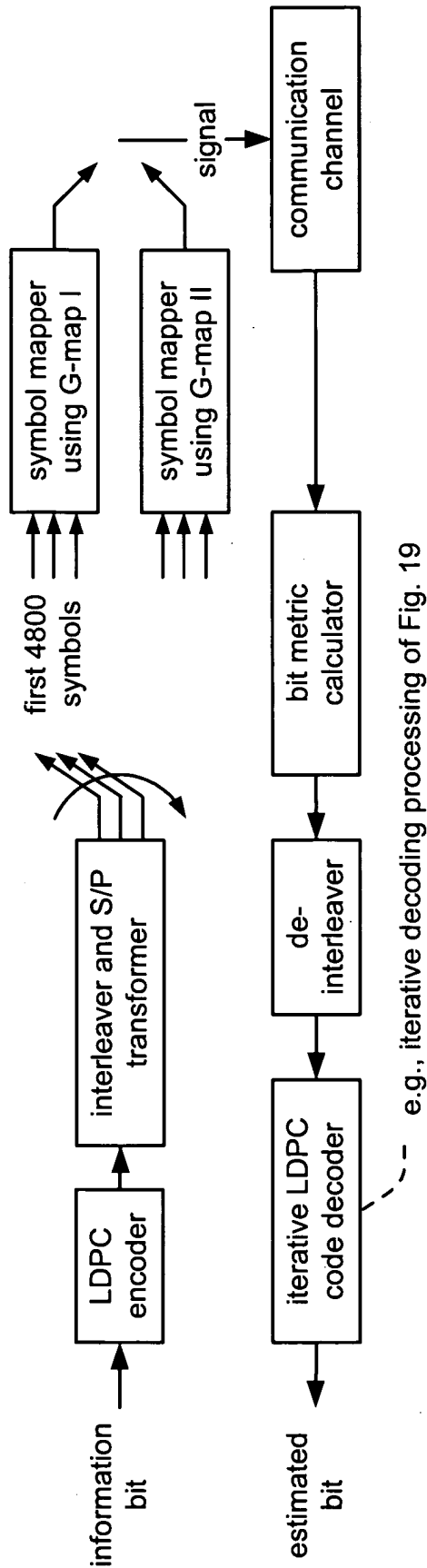
LDPC-BICM communication system I (encoding using single Gray code map and decoding using bit metric only)

Fig. 30A



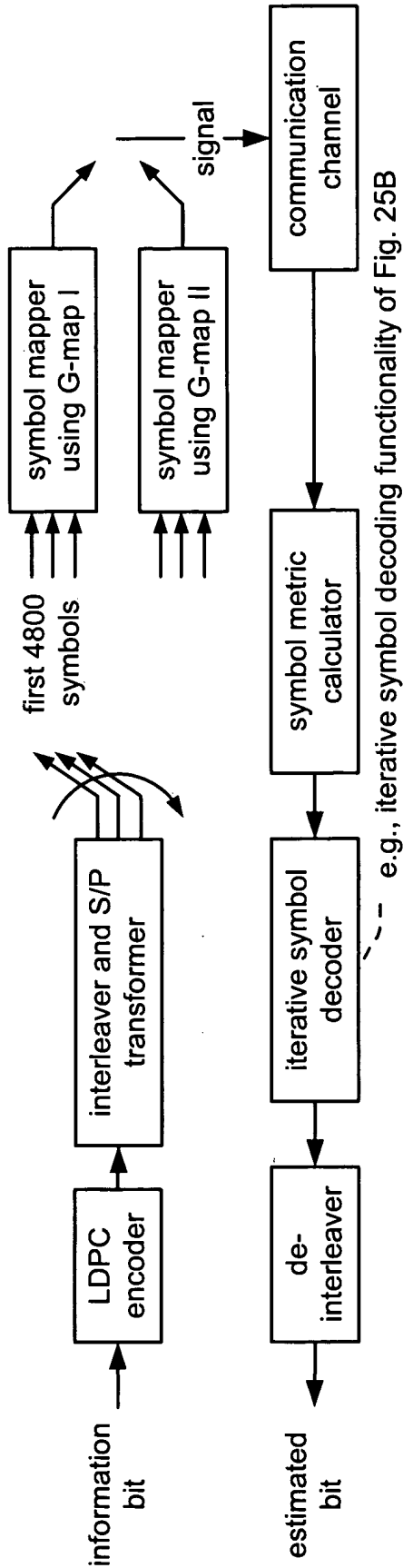
G-map II (Gray code map) (shown using 8 PSK shaped constellation)

Fig. 30B



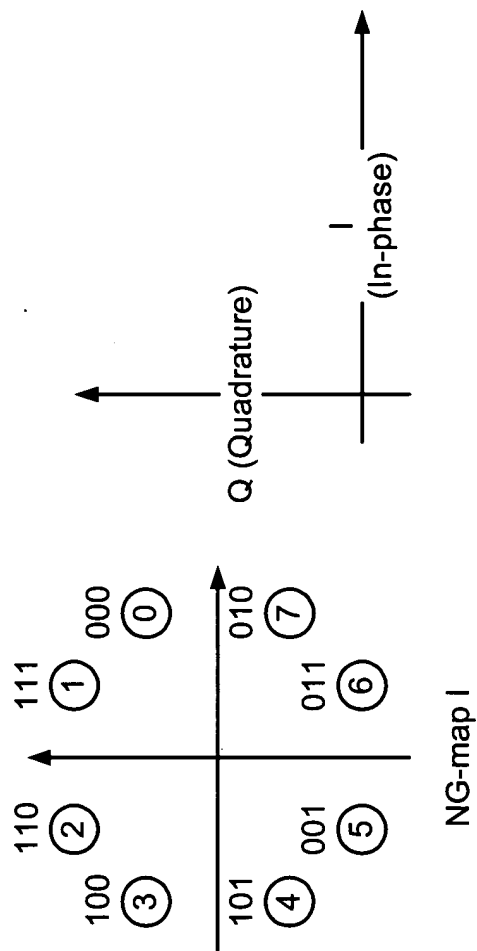
LDPC-BICM communication system II (encoding using 2 Gray code maps and decoding using bit metric only)

Fig. 31A



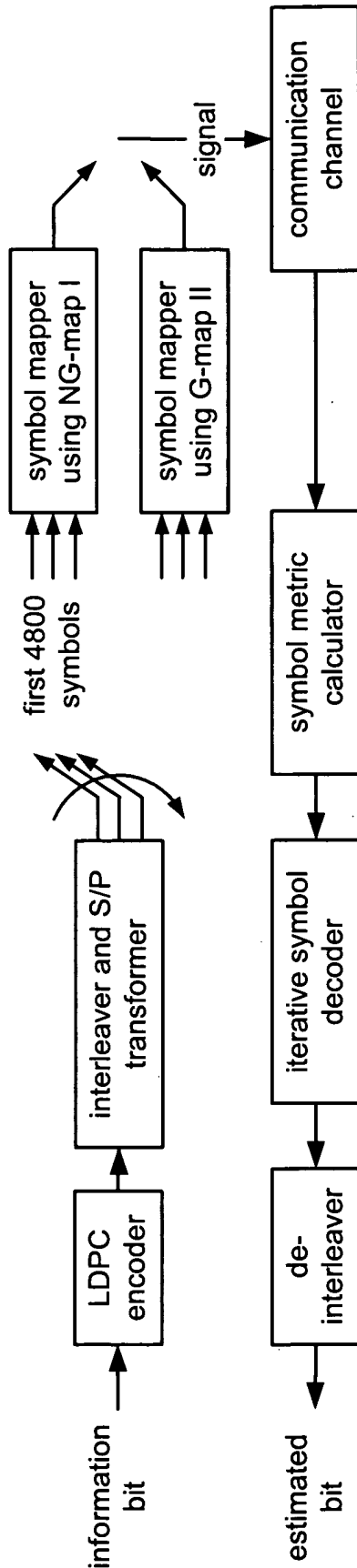
LDPC-BICM communication system III (encoding using 2 Gray code maps and decoding using symbol metric)

Fig. 31B



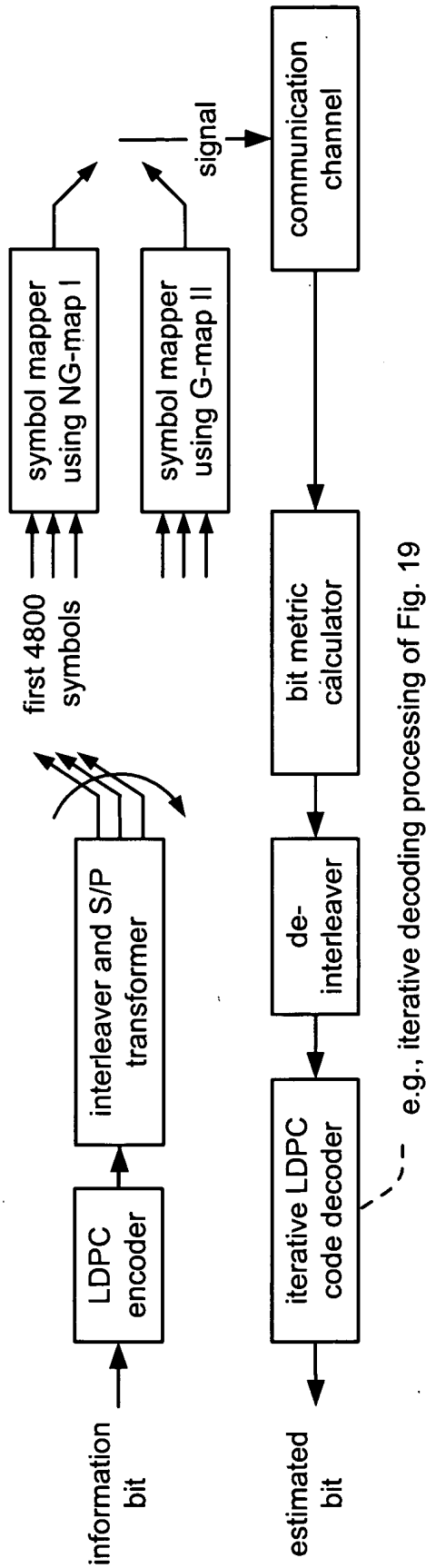
NG-map I (non-Gray code map) (shown using 8 PSK shaped constellation)

Fig. 32A

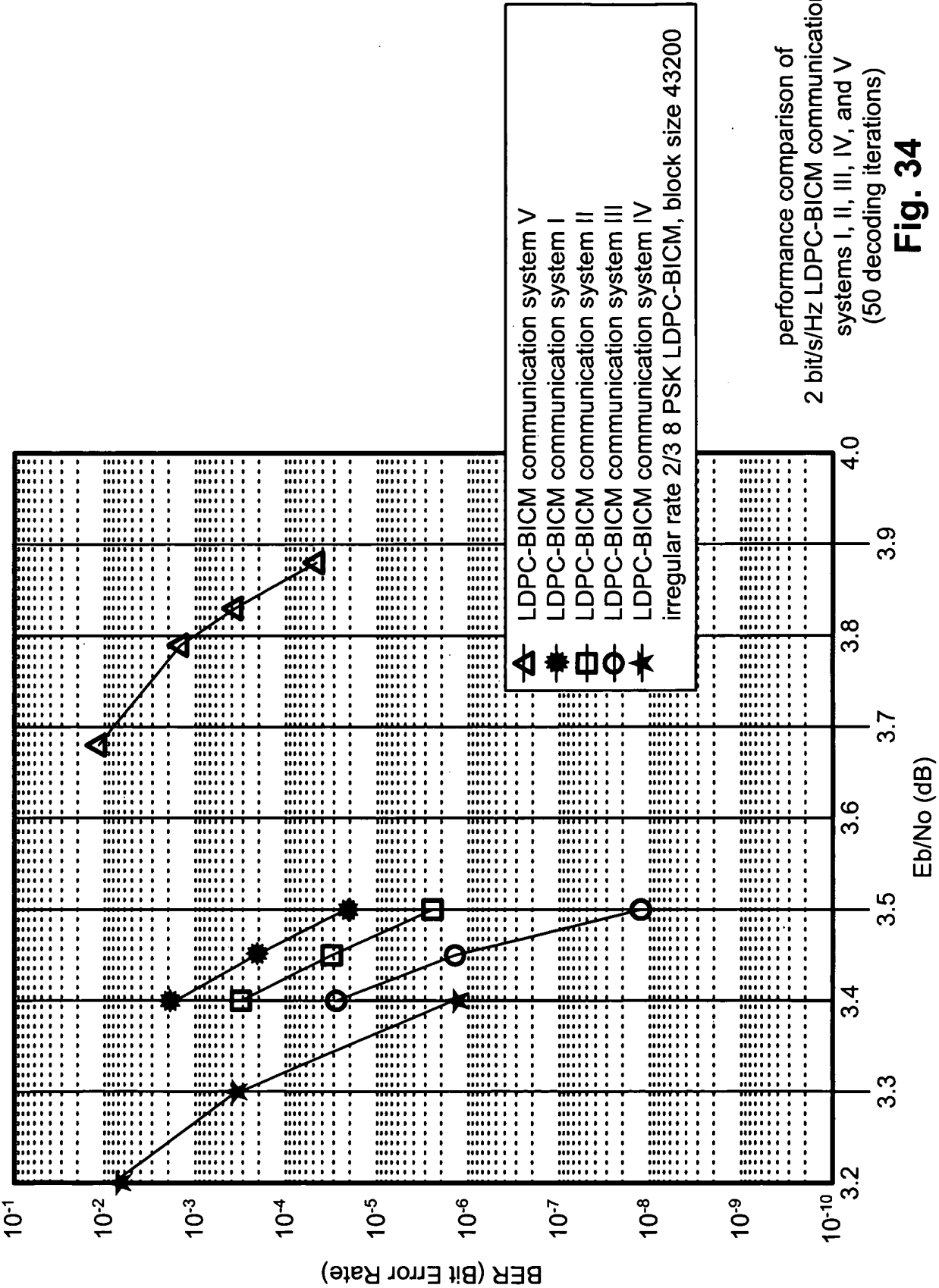


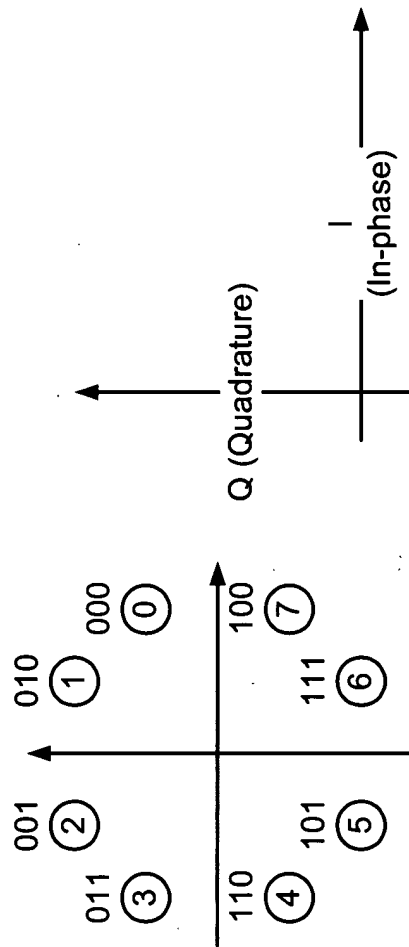
LDPC-BICM communication system IV using NG-map I (encoding using 1 Gray code map, 1 non-Gray code map and decoding using symbol metric)

Fig. 32B

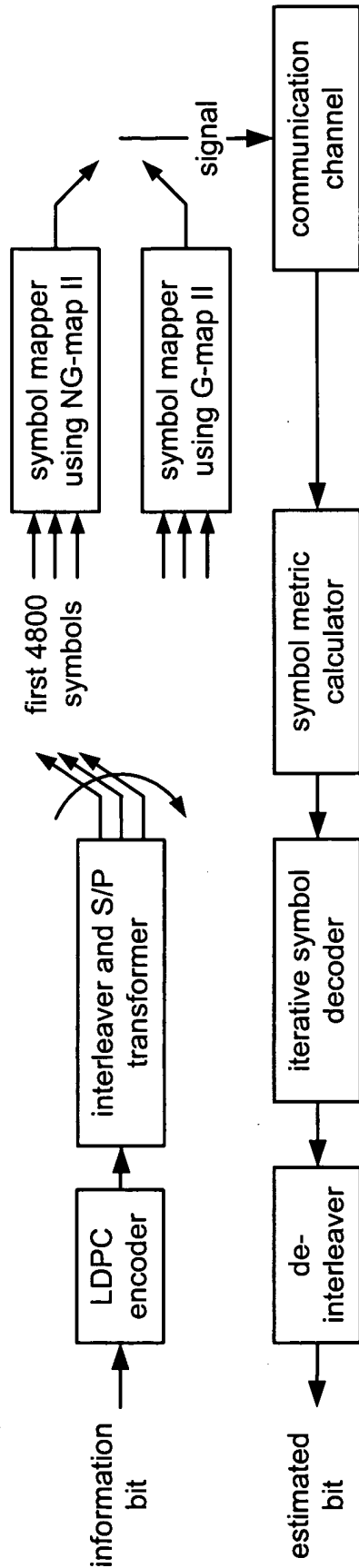


LDPC-BICM communication system V (encoding using 1 Gray code map, 1 non-Gray code map and decoding using bit metric only)
Fig. 33

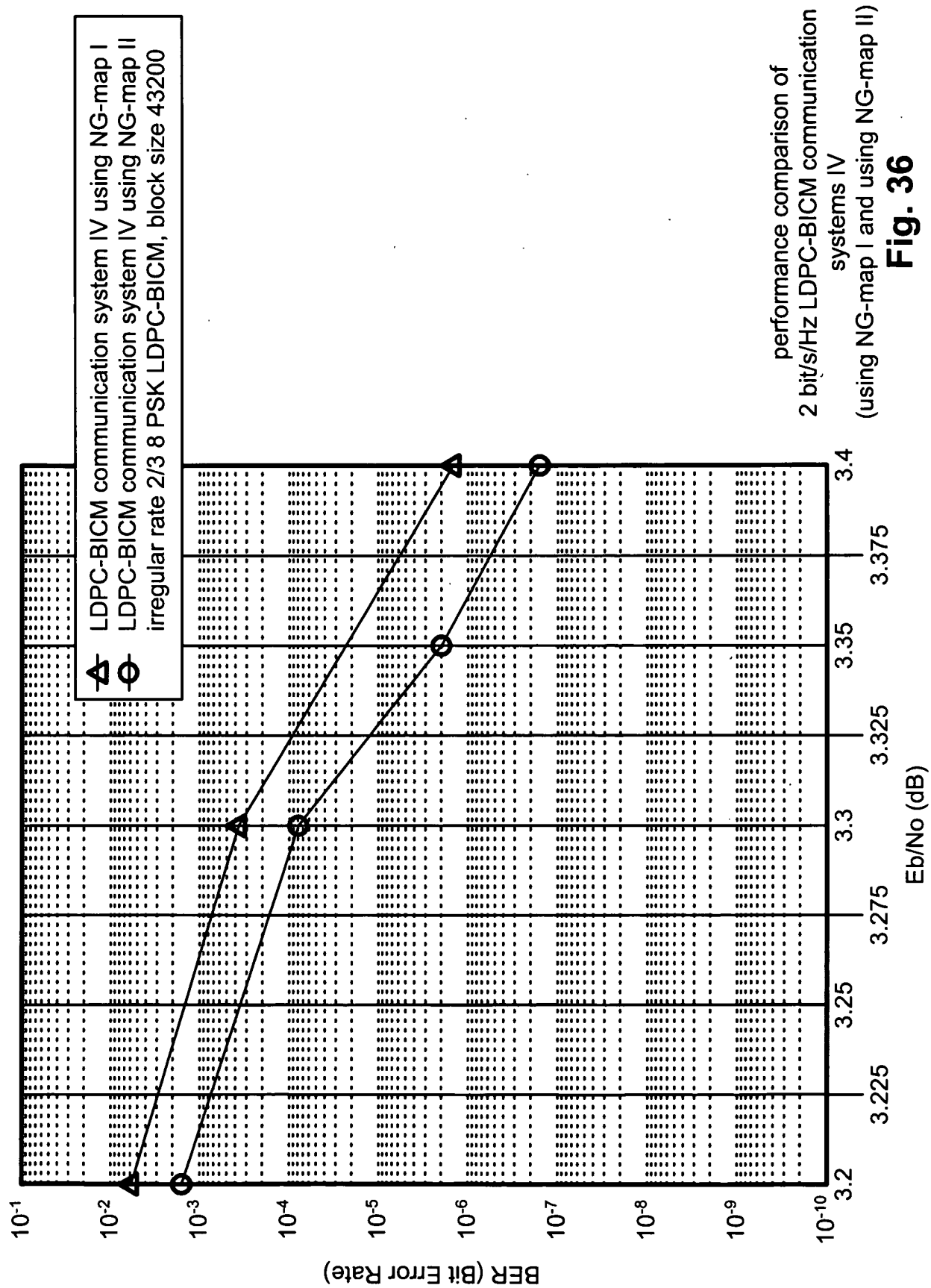


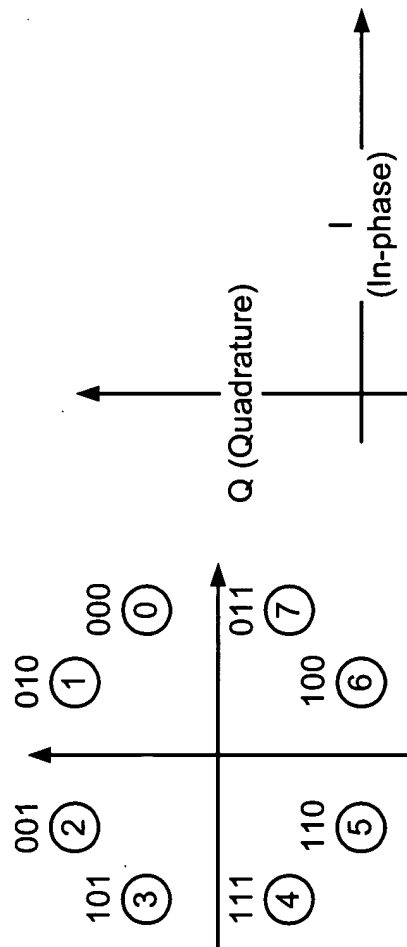


NG-map II
NG-map II (non-Gray code map) (shown using 8 PSK shaped constellation)
Fig. 35A

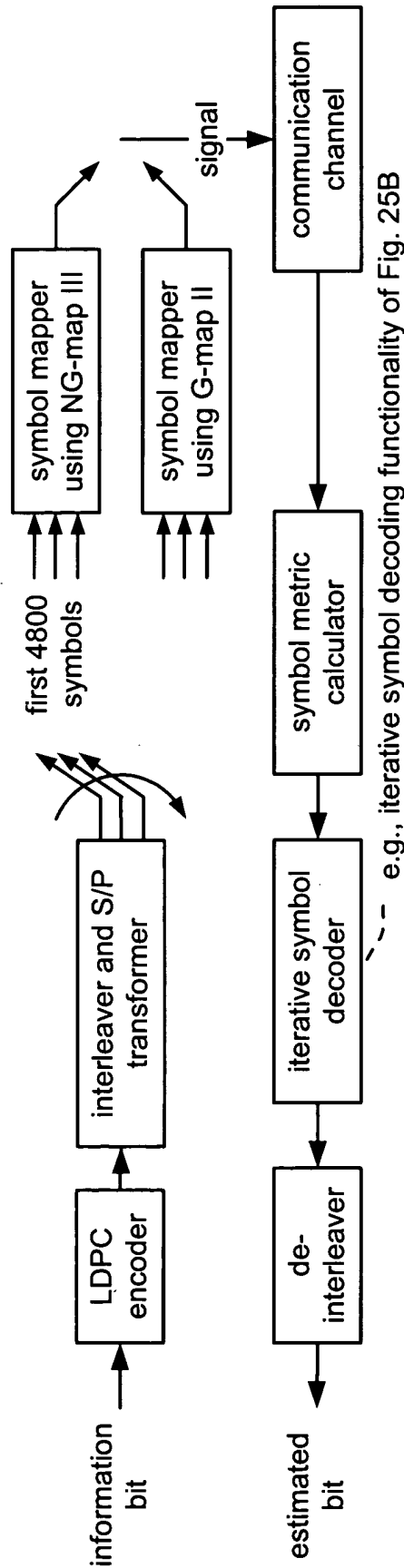


LDPC-BICM communication system IV using NG-map II (encoding using 1 Gray code map, 1 non-Gray code map and decoding using symbol metric)
Fig. 35B





NG-map III
NG-map III (non-Gray code map) (shown using 8 PSK shaped constellation)
Fig. 37A



LDPC-BICM communication system IV using NG-map III (encoding using 1 Gray code map, 1 non-Gray code map and decoding using symbol metric)
Fig. 37B

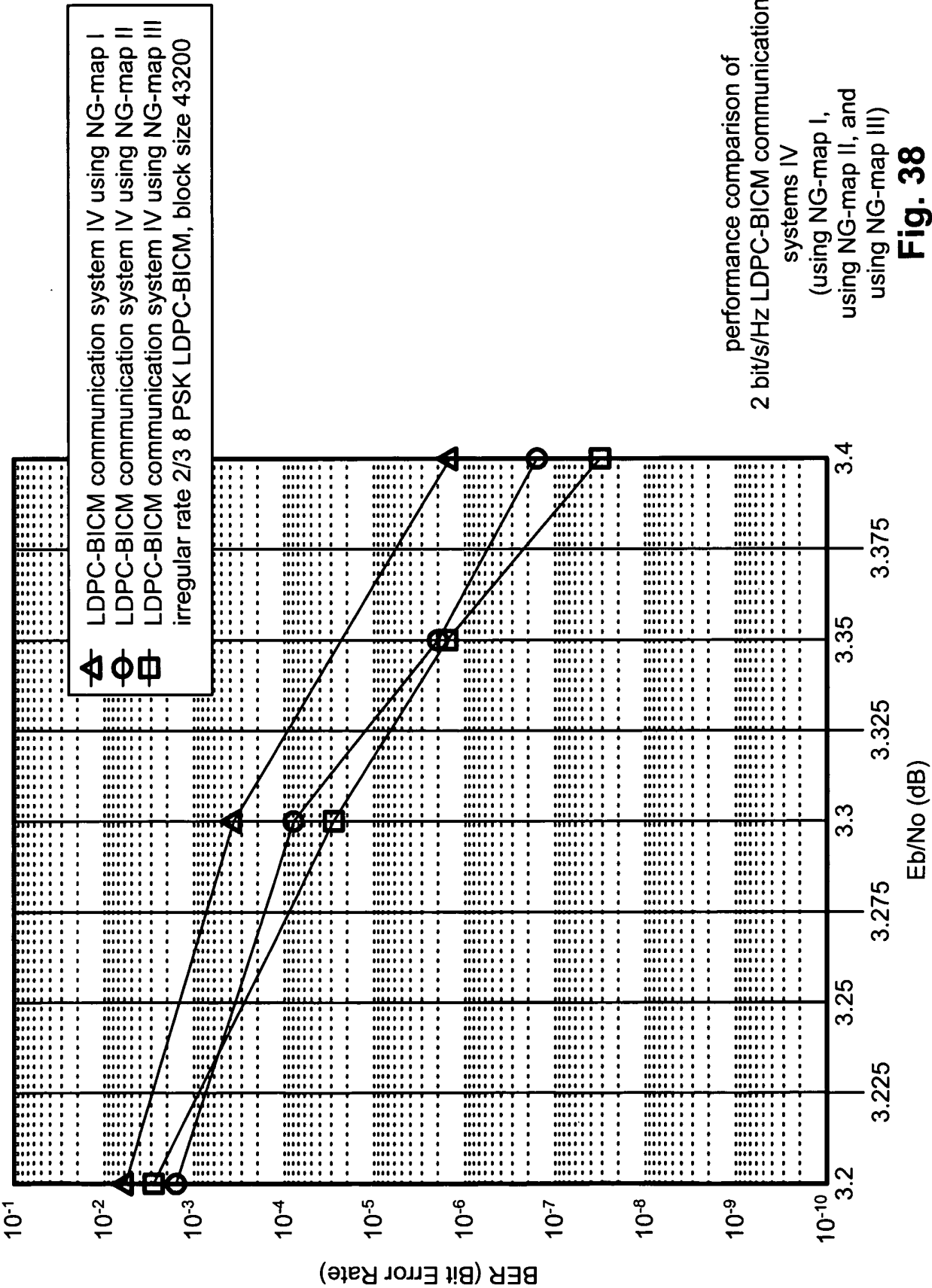
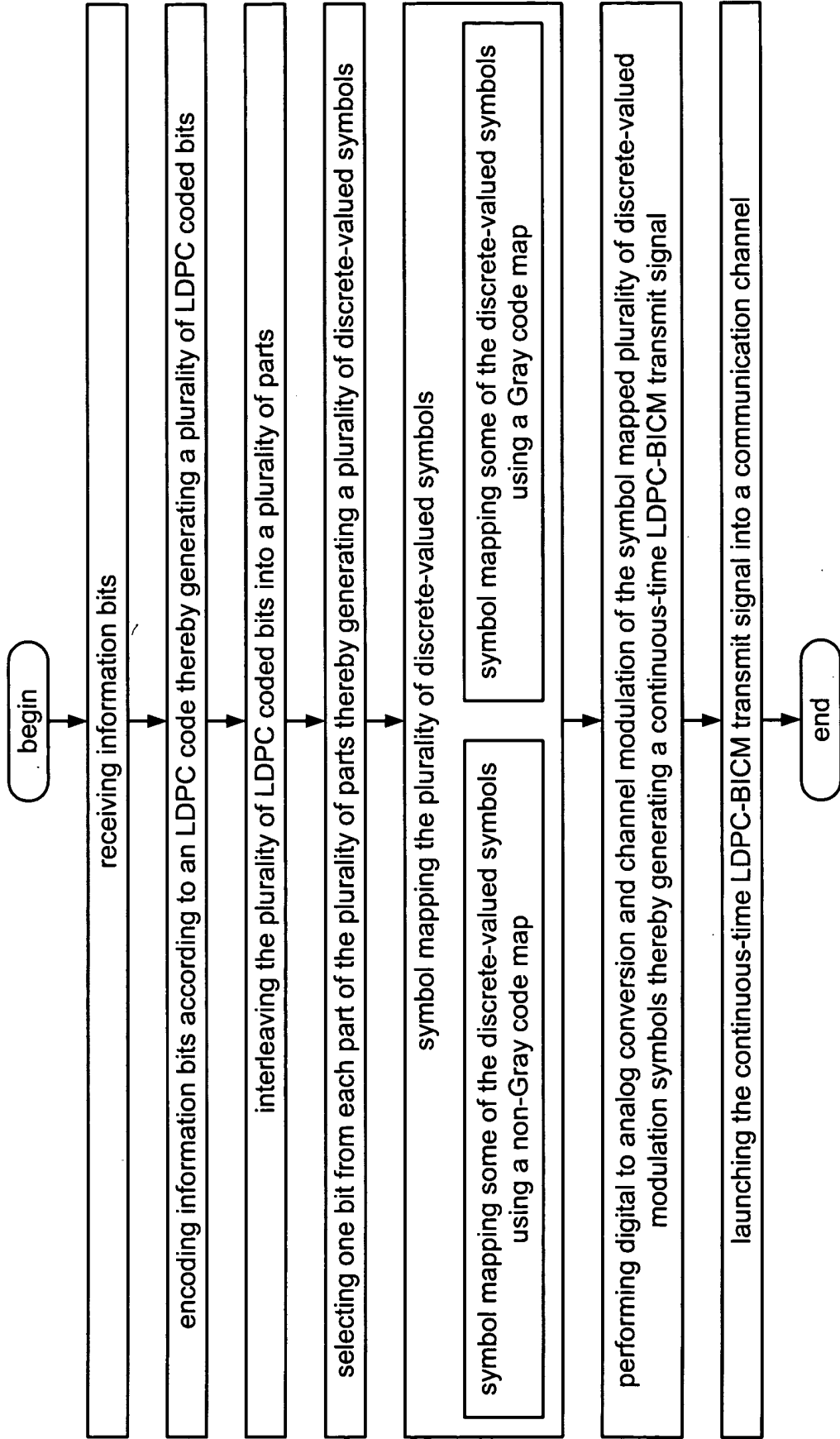
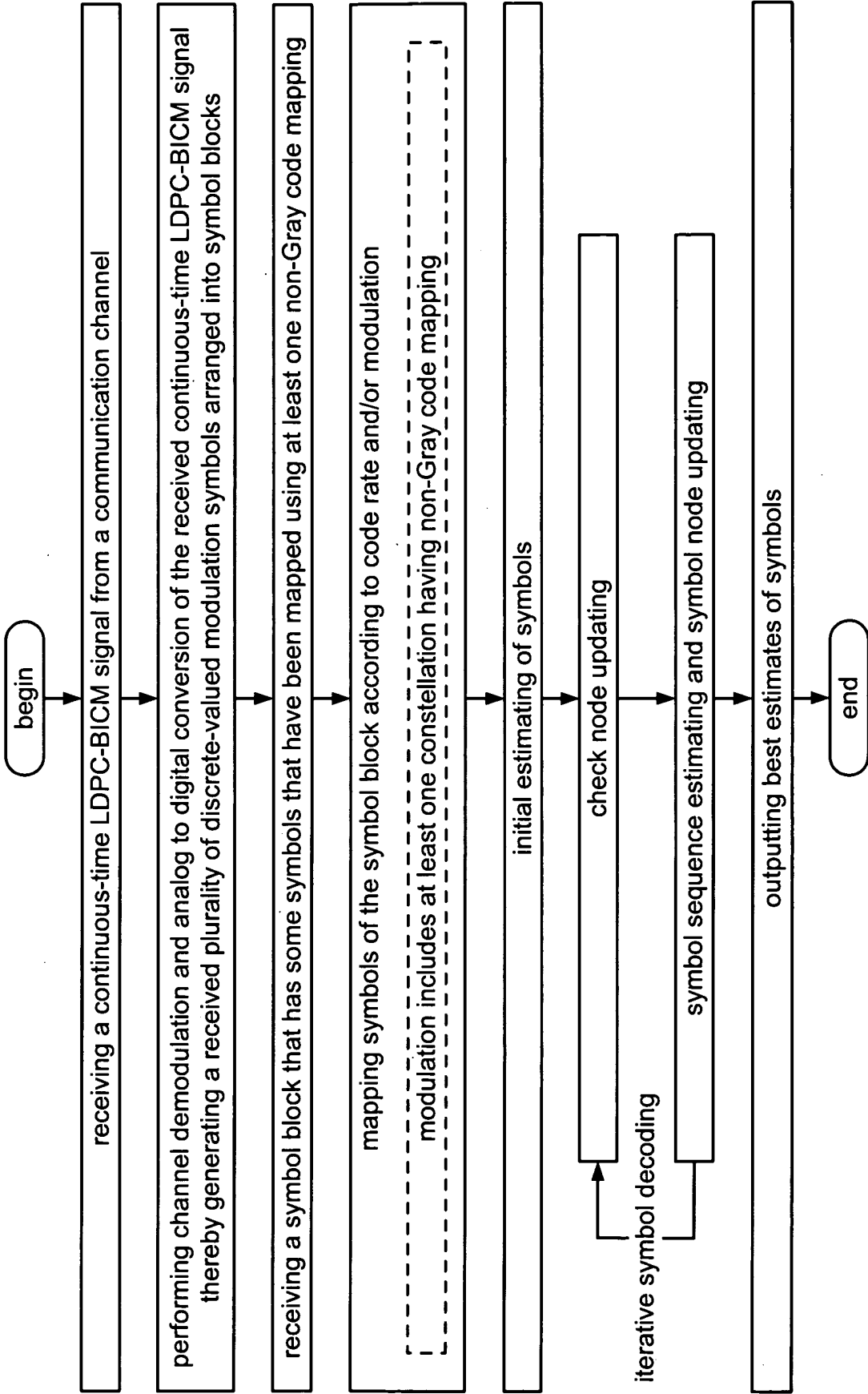


Fig. 38



method for generating an LDPC-BICM signal having a non-Gray code mapping

Fig. 39



method for symbol decoding of LDPC-BICM signal having a non-Gray code mapping

Fig. 40